

Mphasis Capability in Data Migration services

Mphasis provides comprehensive, end-to-end Data Migration Services designed to modernize complex legacy data landscapes and transition petabyte-scale workloads to cloud-native, high-performance platforms. Using a proven execution methodology, strong cloud partnerships, and proprietary automation accelerators, Mphasis reduces migration risk, cost, and timelines while ensuring accuracy and business continuity.

Mphasis Data Migration – Core Capabilities

1. Cloud Data Migration (AWS, Azure, GCP)

- Migration of legacy EDWs, Data Lakes, Marts, and analytical ecosystems to Snowflake, Databricks, Synapse, Redshift, BigQuery.
- On-prem to cloud and hybrid migration scenarios.

2. Legacy Warehouse and Appliance Migration

- Migration from Exadata, Netezza, Teradata, Hadoop systems to modern platforms.
- Consolidation of staging, EDW, and Marts into cloud data architectures.

3. Database Migrations & Replication Design

- Migration from Oracle, SQL Server, DB2, PostgreSQL, MySQL and other engines.
- Schema conversion, stored procedure refactoring, replication and CDC patterns.

4. ETL/ELT Migration & Modernization

- Migration from Informatica, Ab Initio, DataStage, SSIS to Spark / ADF / Glue / DBT.
- Automated code conversion using Mphasis accelerators (MEETL, Polyjuice).

5. Structured Three-Phase Migration Framework (Assess → ADAPT → IMPLANT)

- Assessment: Auto-discovery, dependency mapping, effort estimation.
- ADAPT: Architecture design, cloud setup, CI/CD enablement.
- IMPLANT: Iterative migration, parallel runs, regression testing, cutover.

6. Data Quality & Validation for Migration

- Automated regression testing, reconciliation, and data quality checks.
- Use of MD-Gen, MD-Cert, and validation accelerators.

7. Migration Governance & Program Management

- Multi-wave migration planning.
- MVP-based rollouts with continuous compliance controls.

Key Features of Mphasis Data Migration Services

1. Proven Migration Framework & Accelerators

- Xenon™ execution model for structured migrations.
- Accelerators like Polyjuice, MD-Gen, MD-Cert, MDMU, Pharos (dependency visualization).

2. Automation-Driven Migration

- Automated ETL/ELT conversion, test data generation, validation pipelines.
- Reduces manual re-engineering effort by up to 30%.

3. Petabyte-Scale Migration Expertise

- Successfully migrated **780+ PB** of data across global customers.

4. Cloud-Native Best Practices

- Cloud guardrails for security, compliance, and performance.
- CI/CD for repeatable, consistent deployments.

5. End-to-End Validation & Parallel Run Strategy

- Multi-cycle dress rehearsals.
- Automated reconciliation for each migration batch.

6. Composable Migration Patterns

- Covers app data, warehouse, lake, streaming, API, and integration workloads.

7. Full Lifecycle Coverage

- Assessment → Design → Build → Test → Migrate → Stabilize → Optimize.

Business Benefits

1. Reduced Migration Risk

- Structured methodology + automated dependency discovery significantly reduce operational risk.

2. Faster Time-to-Market

- Automation accelerators reduce migration timelines by **20–30%**.

3. Lower TCO with Cloud-Native Design

- Elimination of legacy appliance costs.
- Pay-as-you-use cloud-native ingestion & compute frameworks.

4. Improved Data Quality & Trust

- Embedded DQ rules, lineage, profiling, and automated reconciliation ensure accurate migration.

5. Future-Ready Data Ecosystem

- Enables analytics modernization, AI workloads, and scalable Lakehouse architectures.

6. Seamless Business Continuity

- Parallel run strategy ensures minimal or zero downtime during cutover.

Case Studies

Region	The Need	Migration Type	Migration Summary	Technology	Highlights / Benefits
APAC	Migration of 60+ applications from Oracle and DB2 to Oracle Exadata Platform	Hetero and Homogeneous DB migration for technology rationalization and consolidation	Discovery, Strategy, design and execution of 266 DB migration from Oracle and DB2 platform to Oracle Exadata, scripted and automated migrations using native tools, automated data verification	DB2, Oracle 11.2.x, 12.0.x,	Implemented DB standards as part of the migration resulting in ease of management and governance.
				Oracle Exadata	DB technology rationalize to Oracle alone by consolidation 266 oracle + DB2 application DBs to 96 Oracle DBs on Exadata platform, reducing the DB sprawl and the operational cost and improved performance.
North Americas	Migration and Consolidation of application DBs from standalone server to Oracle Exadata	Homogenous migration and consolidation	Migration 20+ production database of version 11.2.0.1 to 11.2.0.3 on Oracle Exadata pertaining to critical business function like yield management,	Oracle 11.1.0, Oracle Exadata 11.2.0.3	20+ Oracle database were consolidated o 12, reducing the database maintenance overheads and improving the performance of the database. Implementation of

			DMS, maintenance and engineering		resource plans and partitions improved resource utilization
Europe	Migration of Siebel application from DB2 (Windows) to Oracle Exadata	Heterogeneous data migration for Siebel	Automated data migration from Siebel DB2 to Oracle 11g using native database unload / load scripts and shell scripts. History Data Purged.	DB2 on midrange, Oracle Exadata (11g)	Data Migration done in short duration. Improved performance of OBIEE DB refresh (full and incremental)
					Aligned Siebel DB Technology. Multiple Siebel application stack changes were inherited
APAC	Migrate app & database from AU to NZ, sizes (5TB to 1TB).	Data Center Migration	Migrated Oracle DBs using RMAN, synchronized using Oracle GG, planned and executed cutover seamlessly.	Oracle 10g, GoldenGate,	Near-Zero downtime migration using GoldenGate. Robust Data Validation Process. Purged 60% data in NZ copy
	Purge 60% data Purge in NZ copy. Zero impact to production and minimal downtime.	Data Purge	Purged 60% data in NZ copy – no impact to prod on GG Replicated DB copy.	Siebel	With zero impact to business operations. 50% storage space savings and 3X performance improvement
APAC	Migration of Oracle BRM 6.5 to 7.4 having large volume daily data loads, with database of size 20TB with	Application & Database Upgrade	DB upgraded Oracle 9i to 11g	Oracle 9i &11g	Maintained Data Integrity

	minimal downtime				
	Hardware Refresh	Hardware refresh	Oracle GoldenGate based Data Replication with Data Transformation for app changes	GoldenGate	Zero impact to business
			Multi-day BRM upgrade on DB copy & catch-up before final cut-over	Oracle BRM (6.5 to 7.4)	Near-Zero down time for 20TB application database upgrade.
					The Billing platform was moved to a supported version
Europe	Application modernization of 3 business application from PowerBuilder – Sybase to Oracle – Java	Heterogeneous data migration	Application data residing in Sybase migrated to Oracle using native database tools	Sybase,	Low cost migration of data using native Oracle tools
				Oracle 11g	Extensive Data Verification process to ensure data integrity
					The legacy application was ported to a supported platform
APAC	Archive 1TB data from mainframe DB2 database to Oracle	Heterogeneous Data Migration	Migrated data from DB2 to Oracle using native database tools, shell scripts	Mainframe DB2 v7, Oracle 11g, UNIX	Low cost migration using native tools
					The customer gained sufficient head room and computing capacity for future growth on mainframe

North American	Transition of data & documents from legacy systems to the new onboarding systems.	Data & Document Migration	Migrated Data & Documents as planned and executed cutover seamlessly	SQL Server, Google Refine, Talend	Cleansed data and documents were migrated. Robust Data Validation and Quality Assurance Process.
					Zero impact to business

Database Migration and Upgrade for one of the US largest banks.

LOB
GTI

Sub LOB
XXX

Sponsor
XXXXX

Cost
\$XXXX

Beeline
BLXXXX

Team size
15

Background

There were thousands of databases deployed on aging, decentralized legacy datacenters with phasing-out versions. The data center migration initiative to consolidate these databases to modern infrastructure, upgrade them to the latest versions, and optimize their performance.

Business Problem

The project involved a complex database landscape. This required a deep understanding of each database system and its specific migration requirements from legacy to modern cloud infrastructure.

- **Diverse Database Environment**
- **Accelerated Learning Curve**
- **Seamless Cloud Migration**
- **Infrastructure as Code Challenges**

Mphasis Approach

- Team demonstrated exceptional agility by rapidly upskilling through self-paced learning, exceeding client expectations and effectively supporting cloud migrations.
- Our team expertly navigated the complexities of each database migration, ensuring minimal downtime for multi-tenant databases and applications. We meticulously documented the entire process for future reference.
- We successfully upgraded and migrated over 10,000 production databases incrementally, with zero production rollbacks.

Challenges

- Diverse DB environment (Oracle, MS SQL, PostgreSQL, MySQL and Sybase) that required innovative solutions and dedicated effort.
- The project was high-visibility, with aggressive timelines and significant scrutiny from both bank and Mphasis senior management.

Success factors

- Our team's commitment to quality and efficiency resulted in consistently high-quality migrations, delivered ahead of schedule, ensuring client satisfaction.
- Team's successful upgrade of the environment to next-generation data centers and leading public and private cloud technologies aligns with the organization's strategic goals of modernization and innovation.

Case Study: Data Migration from Sybase IQ to Snowflake



The Business Requirement



One of the largest providers of retirement solutions and insurance products in the United States needs database migration support from legacy Sybase IQ to Snowflake Warehouse. This will help them to scale up and meet their business/IT requirements.



- **Scope** : Data migration from Sybase IQ v16 on -prem database to Snowflake cloud. It targets an online data migration strategy with a minimal amount of downtime for 2 terabyte Sybase IQ database that contain large tables with high Data Manipulation Language (DML) activities.

Our Approach



- Semi-Automated configuration for Sybase IQ Objects conversion based on data type to Snowflake
- Automated data migration job flow for 2-TB via DataStage jobs from Sybase to Snowflake, without PII data on Non-Prod and with PII data on Prod
- Restructure Security matrix with PII masking and configure target Snowflake DB with Users, Roles and grants list from the source database.
- Scheduled Driven ETL process developed for 140 source files using client framework for configuring source file read to load into the staging table.
- Manage Data with end-to-end control that strengthen accuracy, consistency, completeness, timeliness and traceability. Be the best in class in data management including governance, data quality and metadata management for Key attributes.

Key Benefits



- Reduced operational effort and improve stability. Fine grained deployment flexibility and strong community support.
- Role-based PII access control at object level.
- Additional audit controls on key attributes for SOX and ACMG compliance.

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Services Featured



- Reduced operational risk by introducing automation in straight through processing in the data management.
- Standardized the data transformation process.
- Introduced role-based security at object level in Investment Snowflake.
- Automated Data migration validation for data integrity and compliance.

Technologies



- Sybase IQ 16.x
- Snowflake
- DataStage
- Talend/Python
- Autosys

Challenges



- **Syntax Difference** : - Unsupported datatype/syntax should be converted manually or Re-written of loading script is required.
- **Hierarchical Queries** needs to be converted using CTE (Common Table Expression) or alternate syntax.
- **Data Quality** : - Application Source files are having different delimiter.
- **Environment** : - Data Migration/Incremental processing against live DB.

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Case Study: Relational SQL Server DB to NoSQL



Client: Leading Financial Institute in US

Problem statement: Client had to undergo a transformation of technology stack for its Market watcher and Investing application to be in compliance with high availability. With the Application layers upgraded to Java/AngularJS and availability as a key factor the client has decided to migrate the existing RDBMS (MSSQL) data base to a NoSQL (Cassandra) Keyspace

Mphasis contribution

- Understand the existing Application workflow and the Data Model
- Create the Application Driven Data Model for Cassandra (NoSQL) with the rule of Table per Query
- Decisions on Partition Keys and Business keys
- Create procedures for Data Extraction and Movement across the environments.
- Train the Application Developers to understand the NoSQL data structures and implement Transactions in the application layer
- Setup infrastructure to connect & Load to the Target Cassandra Keyspace
- Create Keyspaces in lower environments. Generate Test Data for Lower environments and run regressions
- Automate the migration tasks (Extraction, Data transmission and Load)
- Performance Tuning the Application to use the Cassandra features

Benefits to client

- Achieved a High Availability Data Source
- Response times of the modules decreased drastically (Minutes to Seconds)
- Automation made user friendly and can be run with minimal knowledge
- Multiple runs to setup benchmark and estimate the Production cutover. Near ZERO downtime

Challenges

- Data Modelling concepts for NoSQL(Cassandra). Decision making on Partition key and Clustering Keys
- Write Query first and design the table approach. No possibility to change the Filter conditions
- Cassandra does not support Joins enforces to achieve a Data Model adequate for future enhancements
- No concept of Commit / Rollback.
- Address Tombstone issues during CRUD operations as Cassandra operates on versioning of data rather than actual update or deletion of the data



RDBMS to NoSQL
Modernization

No SQL Data
Modelling

CRUD
Operations
using CQL
Scripts

Automation
using Batch
Scripts

RDBMS to
NoSQL Data
Migration

Service Featured

Metrics

Production roll-out in period
of 6 months



Tools & Technologies

MS SQL Server, TOAD, DataStax DevCenter, CQL/Python,
Windows Batch Scripts



Further Information: For more information about our G-Cloud services, please contact our Public Sector Team at mphasisukps@mphasis.com

