

Data Cosmos_Data Migration Tool

Automated Schema & Data Migration Accelerator

Part of the Coforge Data Cosmos™ Platform | Supernova™ Portfolio

Coforge Limited | Data HBU

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Solution Overview

Data Cosmos_Coforge Data Migration Tool is an end-to-end automated accelerator for enterprise database schema and data migration across on-premises and cloud platforms. It eliminates the manual, error-prone processes that plague traditional migration projects by delivering intelligent auto-mapping, metadata-driven schema conversion, and visual validation with audit-ready reconciliation. The tool provides universal compatibility across both on-premises and cloud environments with seamless ecosystem integration with major data platforms.

Traditional database migrations are among the most time-consuming and risk-laden activities in enterprise data modernization. Teams spend weeks manually mapping schemas, converting DDL across platforms, debugging type mismatches, and validating data integrity — often with error rates exceeding 15–20%. The Data Migration Tool transforms this process by automating metadata extraction, intelligent field mapping with human-in-the-loop review, and full-load migration strategies — reducing migration timelines by 50% while cutting errors by 60%.

Challenges Addressed

Challenge	Impact
Manual Effort & Time-Consuming Processes	Migration projects consume weeks of engineering effort with repetitive manual schema mapping, DDL conversion, and data validation tasks
High Error Rates & Inconsistent Quality	Manual type mappings lead to data loss, truncation, type mismatches, and broken downstream pipelines — requiring costly rework cycles
Lack of Visibility & Governance	No centralized tracking of migration progress, no audit trails for regulatory compliance, and reconciliation gaps that create compliance risk

Core Capabilities

Capability	Description
Metadata Extraction	Automated discovery and extraction of source schemas, data types, constraints, indexes, relationships, and dependencies — preparing complete metadata inventory for target platform configuration
Schema & Data Migration	Automated DDL conversion supporting full-load strategies across heterogeneous platforms with intelligent type mapping, constraint preservation, index recreation, and stored procedure conversion
Intelligent Data Mapping	AI-assisted auto-mapping of source-to-target fields with confidence scoring. Users can review, edit, approve, or override mappings through an intuitive UI — ensuring governance compliance and domain accuracy
Visibility & Governance	Real-time migration dashboards showing progress, success/error summaries, row-count reconciliation, and audit-ready reports for complete migration traceability and regulatory compliance

Supported Platforms

Platform	Type
Oracle	Source / Target
Azure Synapse Analytics	Target
PostgreSQL	Source / Target
Greenplum	Source
Azure Data Lake Storage Gen2	Target
Snowflake	Target

Quantified Impact

Metric	Value
~50% Efficiency Boost	Increase in schema and data migration speed through automation
~60% Error Reduction	Decrease in errors compared to manual migration processes
~30% Scalability Improved	Proven performance handling large, complex datasets

Industry Applications

Banking & Financial Services

Use Case	Example
Core Banking Database Modernization	A Tier-1 bank migrates 500+ tables from Oracle-based core banking (Temenos T24) to Azure Synapse Analytics for BCBS 239 regulatory reporting modernization. The tool auto-extracts metadata, maps complex banking-specific data types (CLOB, NUMBER with precision), converts DDL to Synapse-compatible T-SQL, and auto-maps 85% of fields — with remaining 15% flagged for analyst review. Reconciliation dashboards validate row counts providing audit-ready evidence for regulators.
Risk Data Warehouse Migration	A bank’s risk data warehouse on Greenplum is migrated to Snowflake. The tool handles 200+ tables with complex partitioning, materialised views, and stored procedures — delivering the migration 45% faster than manual estimate with zero data loss.

Insurance

Use Case	Example
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Policy Administration System Migration	A multi-line insurer migrates policy administration data from Oracle to Snowflake for unified underwriting analytics. The tool maps 300+ tables with insurance-specific schemas and auto-converts Oracle PL/SQL functions to Snowflake SQL. Intelligent mapping handles disparate date formats and currency precision across legacy policy systems.
Actuarial Data Platform Migration	Actuarial modelling data is migrated from on-premises PostgreSQL to Azure Synapse, with the tool validating statistical precision of numerical fields critical for loss-ratio and reserve calculations.

Travel, Transportation & Hospitality

Use Case	Example
Reservation System Migration	A global airline migrates its reservation database from legacy Oracle to Azure Synapse for real-time booking analytics. The tool handles high-volume transactional tables (bookings, passengers, segments, fare classes) with millions of rows, auto-mapping GDS-specific fields and validating referential integrity.
Loyalty Platform Data Migration	A hotel chain migrates guest loyalty data from PostgreSQL to Snowflake, ensuring point-balance precision and membership tier data integrity across 10M+ guest profiles.

Healthcare & Life Sciences

Use Case	Example
EMR/EHR Data Migration	A healthcare provider migrates EMR data from on-premises Oracle to a HIPAA-compliant Azure Data Lake. The tool handles HL7/FHIR-structured tables, auto-maps clinical data types, and provides audit-ready reconciliation reports required for HIPAA compliance. Sensitive PHI fields are flagged during mapping for encryption configuration.
Clinical Trial Database Migration	A pharma company migrates clinical trial databases from Oracle to Azure Synapse, preserving statistical precision of trial endpoints and maintaining FDA 21 CFR Part 11 audit trail requirements.

Target Audience

- Data Engineers
- Cloud Migration Architects
- Database Administrators
- Platform Engineering Teams
- IT Program Managers

Azure Compatibility

The Data Migration Tool integrates natively with Azure Synapse Analytics, Azure Data Lake Storage Gen2, Azure SQL Database, and PostgreSQL on Azure. It supports migration to Azure-native platforms and is part of the Coforge Data Cosmos Supernova portfolio for data modernization and cloud migration, designed to work alongside Azure Database Migration Service for comprehensive enterprise migration programs.