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Data sharing and transformation in real time

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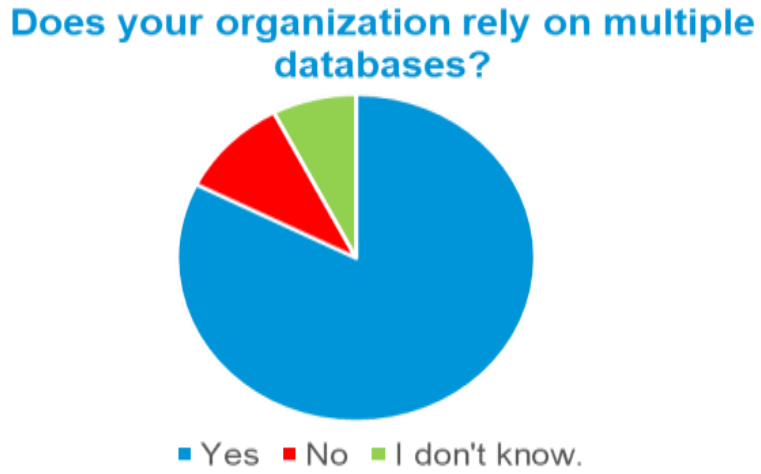
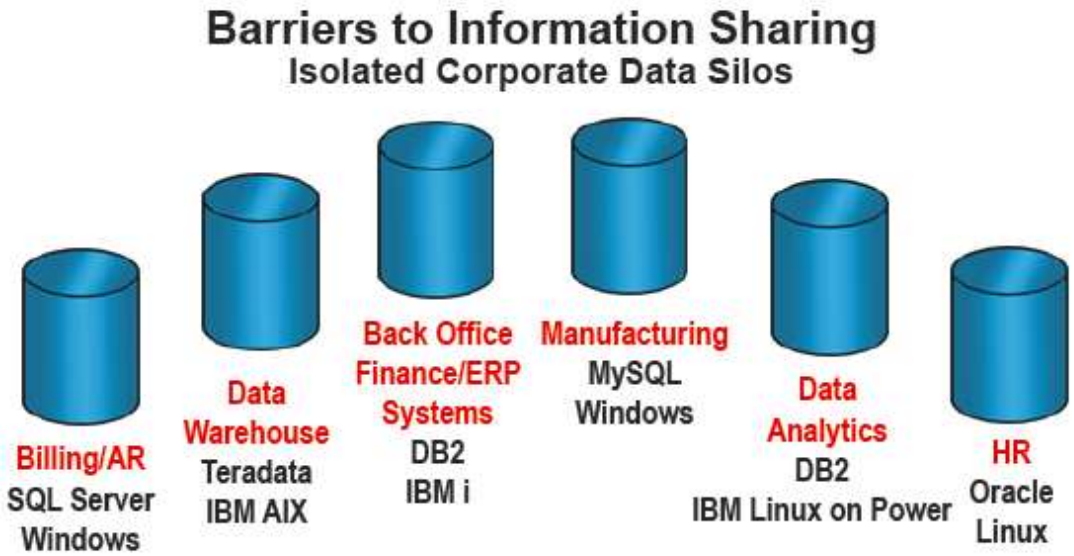
Today's Businesses Have Multiple Databases



Source: Vision Solutions 2017 State of Resilience Report

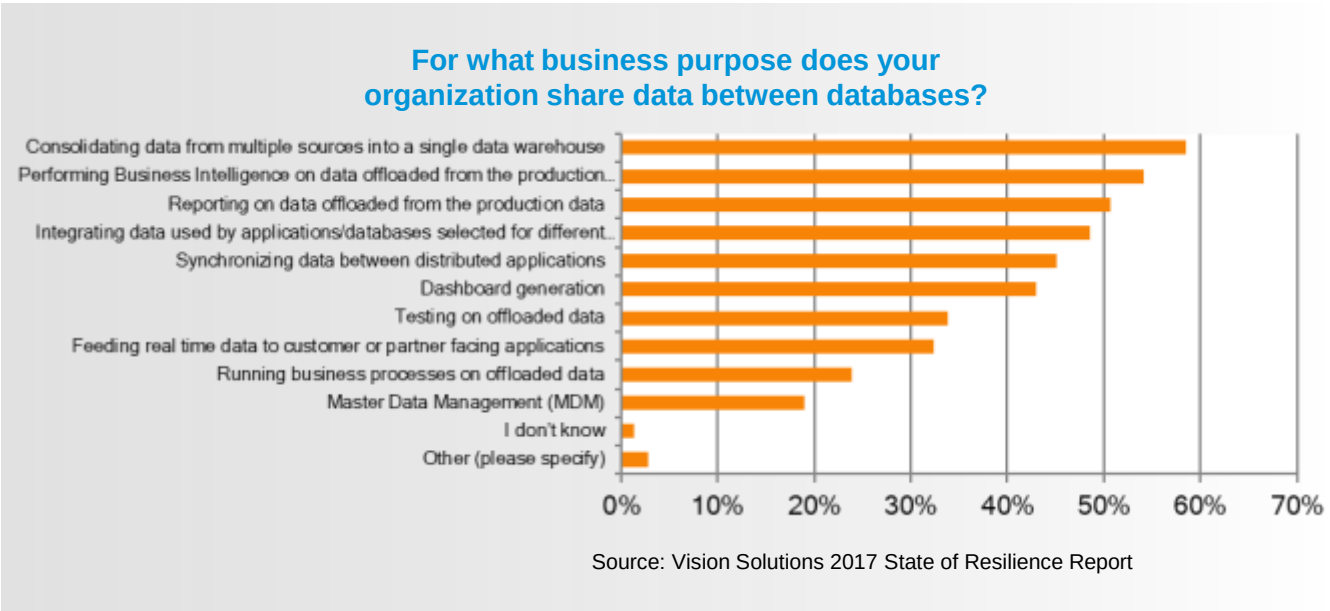
- Multiple databases are the norm
  - Merger or acquisition
  - Choice of multiple apps or databases for best of breed solutions
  - Combination of legacy and new databases
  - Multi-organization supply chain

- IT infrastructures are heterogeneous
  - Database platforms
  - Operating systems
  - Hardware



Varied Business and IT Goals for Data Sharing

- Protecting performance of production database by offloading data to a reporting system for queries, reports, business intelligence or analytics
- Offloading data for maintenance, backup, or testing on a secondary system without production impact
- Consolidating data into centralized databases, data marts or data warehouses for decision making or business processing
- Maintaining synchronization between siloed databases or branch offices
- Feeding segmented data to customer or partner applications
- Migrating data to new databases
- Replatforming databases to new database or operating system platforms



Source: Vision Solutions 2017 State of Resilience Report

Traditional Methods for Sharing Data

- Direct network access
  - Reporting on production servers across the network during business hours
  - *Issue:* Negatively impacts network and database performance – resulting in user complaints!
- Off-hours reports and extractions
  - Run reports off-hours or perform nightly ETL processes to move data to a reporting server
  - *Issue:* Business operates on aging data until next extraction
  - *Issue:* Difficult to find acceptable time to perform an extraction
- ETL (Extract-Transform-Load) Processes
  - FTP/SCP/file transfer processes or Manual scripts or Backup/restore or In-house tools
  - *Issue:* Periodic, not real-time, delivery of data
  - *Issue:* Labor intensive to create processes and tools
  - *Issue:* Expensive to develop and maintain
  - *Issue:* Prone to errors

In-House ETL Scripts and Processes Are Not Free

- Upfront development costs
  - Development of code to perform database extraction, transformation, and load
  - Additional requirements for additional pairings, schemas, etc.
- Test system expenses
  - Hardware and storage resources
  - Database licenses for test systems
  - Add-on products, e.g. gateways
- Maintenance costs
  - Ongoing enhancements for altered schemas, additional platforms
  - Testing new database and OS releases
  - Cross training and documentation to reduce turnover risk
- Lost opportunity costs for other initiatives

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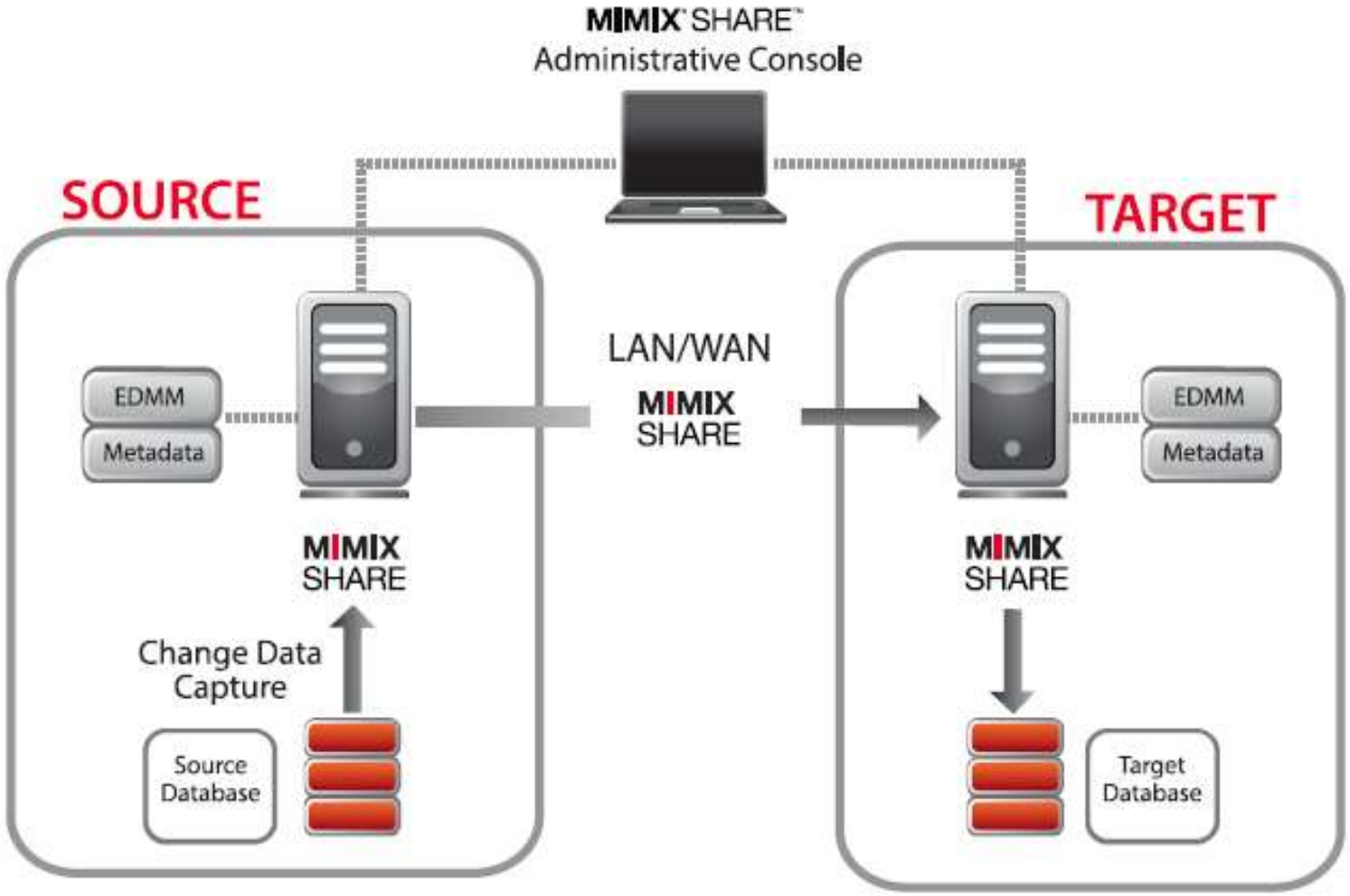
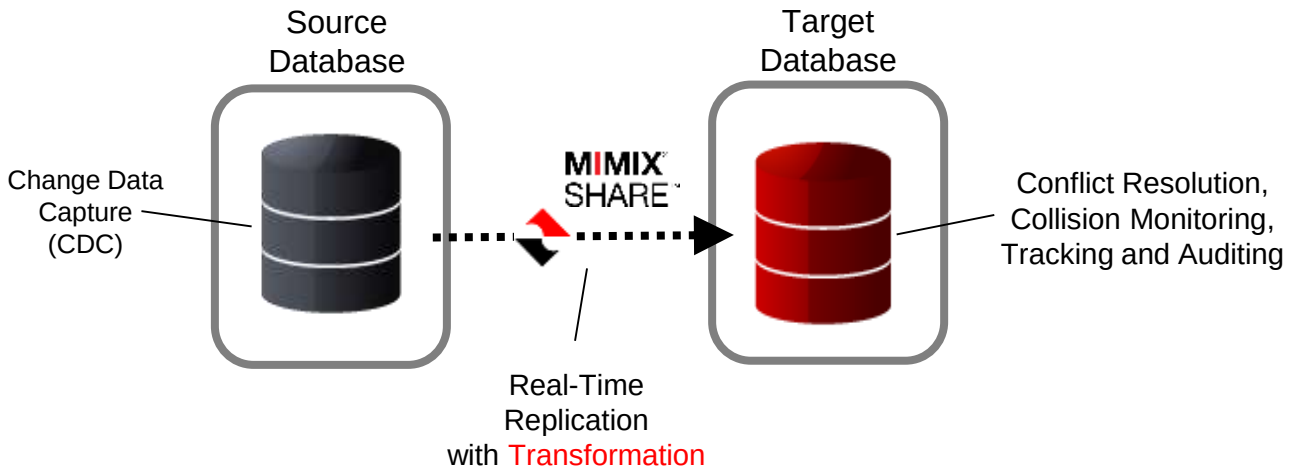
Real-Time Replication High-Level Architecture

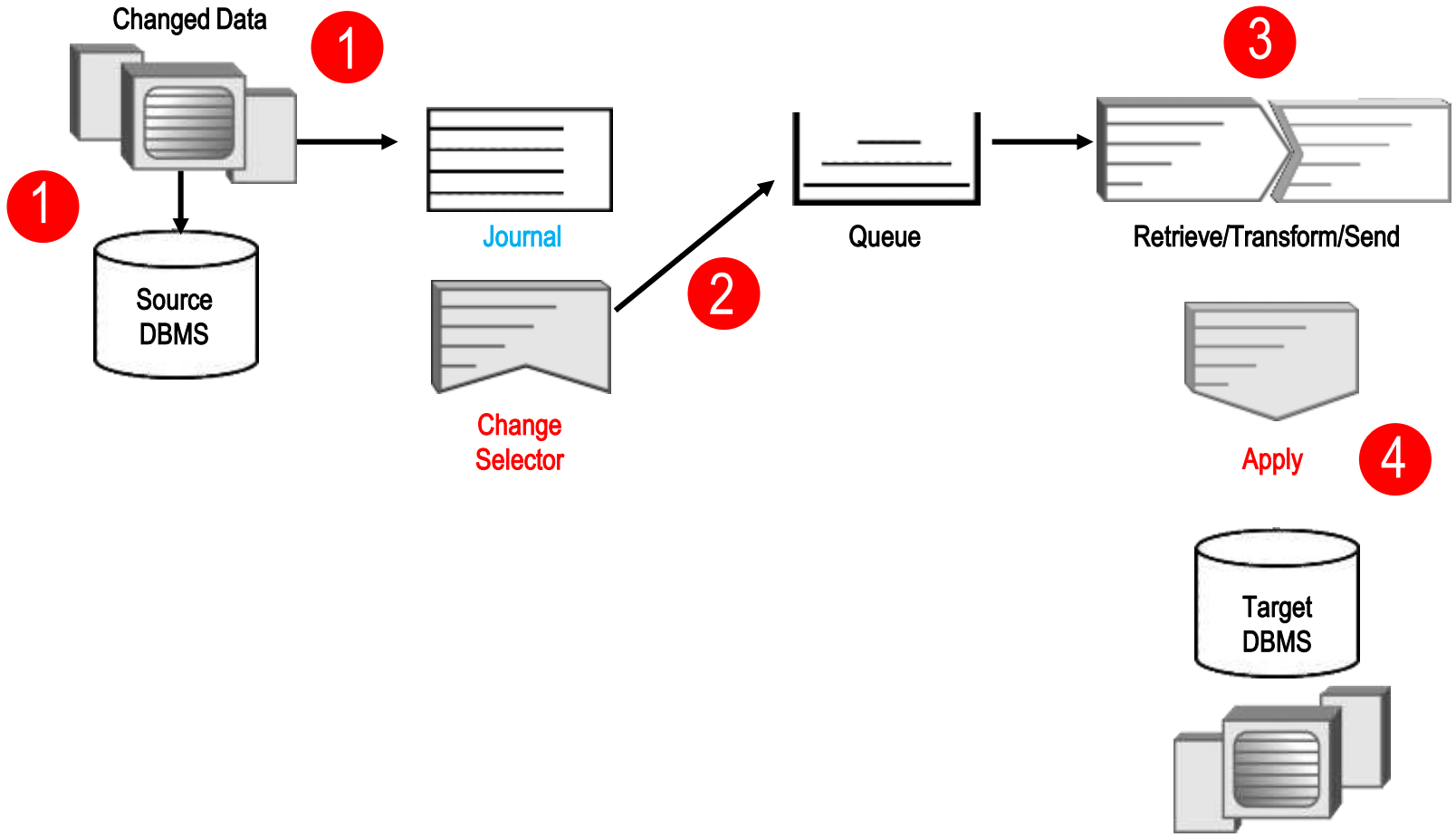


Change Data Capture (CDC) for Real-Time Replication

- Change Data Capture (CDC) captures database changes immediately and quickly replicates them to another database(s) in Real-Time
- Only changed data is replicated to minimize bandwidth usage
- Automatically extracts, transforms and loads data into target database without manual intervention or scripting



IBM i Log-Based Data Capture



1. Use of Journal eliminates the need for invasive actions on the DBMS.
2. Selective extracts from the logs and a defined queue space ensures data integrity.
3. Transformation in many cases can be done off box to reduce impact to production.
4. The apply process returns acknowledgment to queue to complete pseudo two-phase commit.

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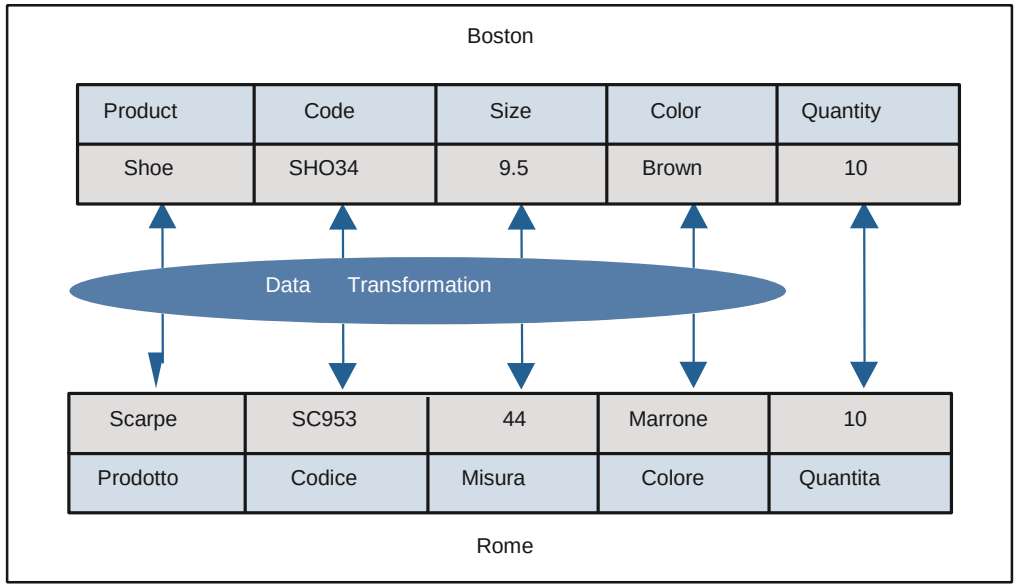
Transform the Data Exactly HOW You Need To

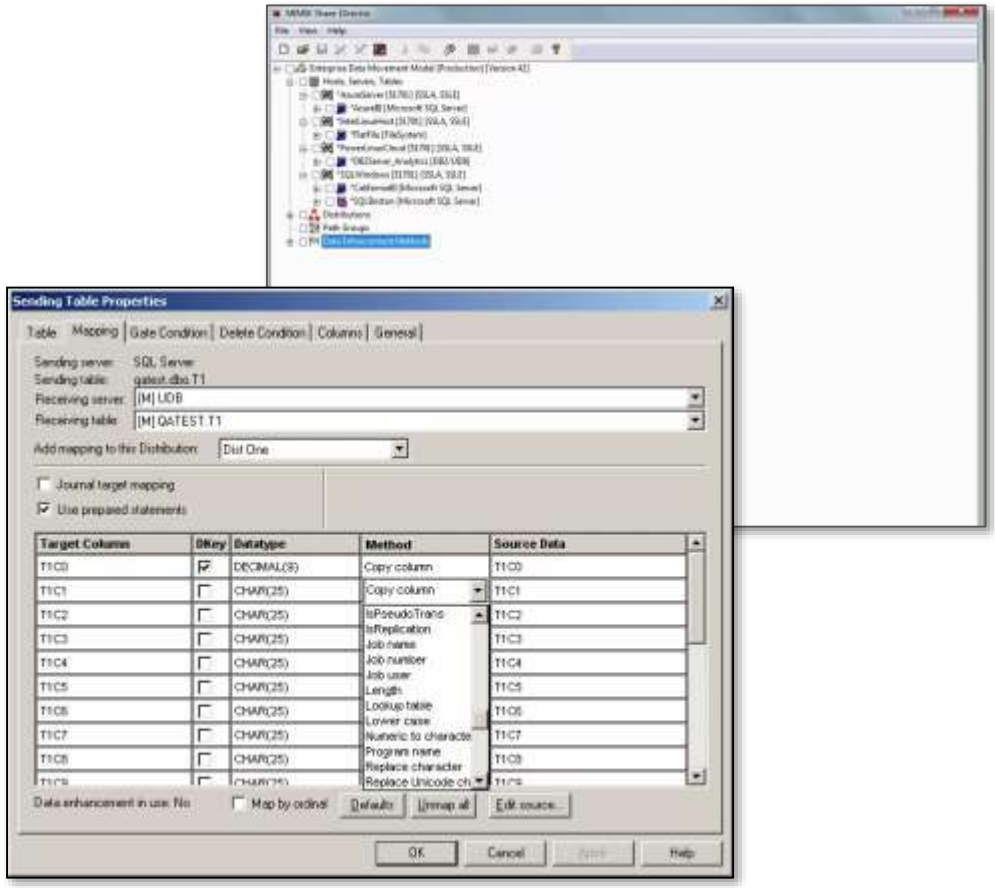
Transforms data into useful information

- 80+ built-in transformation methods
- Field transformations, such as:
  - DECIMAL(5,2)
  - nulltostring(ZIP_CODE,'00000')
- Table transformation, such as:
  - Column merging
  - Column splitting
  - Creating derived columns
- Custom lookup tables
- Create custom data transformations using powerful Java scripting interface



MIMIX Share Replaces Manual Processes

- Point & click graphical user interface
- Single view of data across databases and operating systems
- Simple, model-based configuration
- Automatically creates target tables from the source table definition
- No programming required



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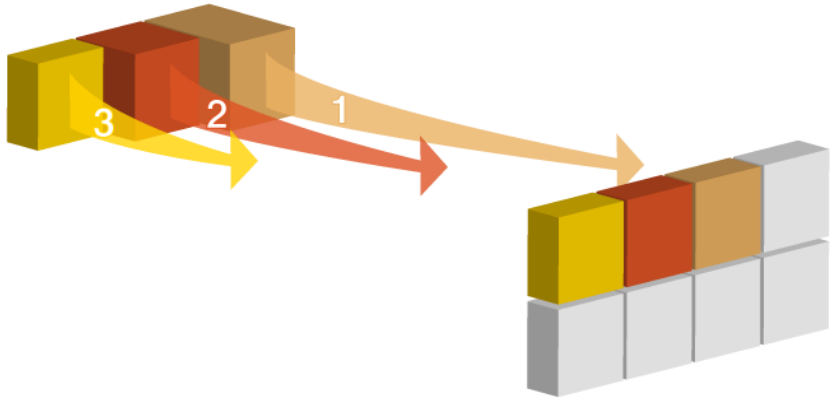
Guarantees Information Accuracy

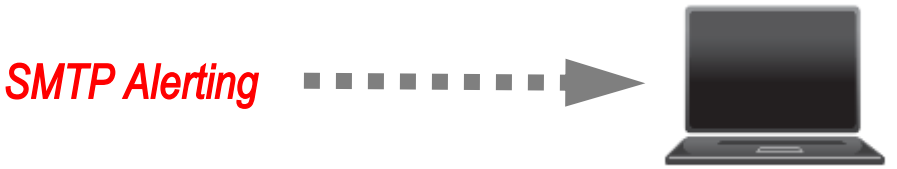
Ensures ongoing integrity

- Changes collected in queue on source
- Moved to target only after committed on source
- Ensures write-order-consistency retained
- Queues retained until successfully applied
- No database table locking



Ensures failure integrity

- Automatically detects communications errors
- Automatically recovers the connection and processes
- Alerts administrator
- No data is lost



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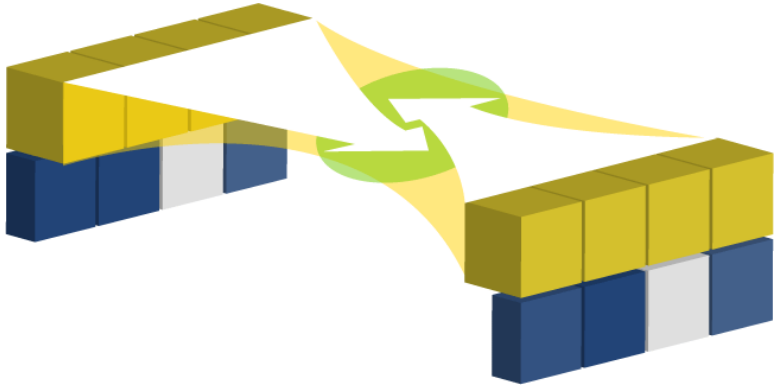
Accurate Tracking & Data Auditing

Detects and resolves conflicts
- Maintains data integrity

Model verification
- Validates date movement model
- Model Versioning

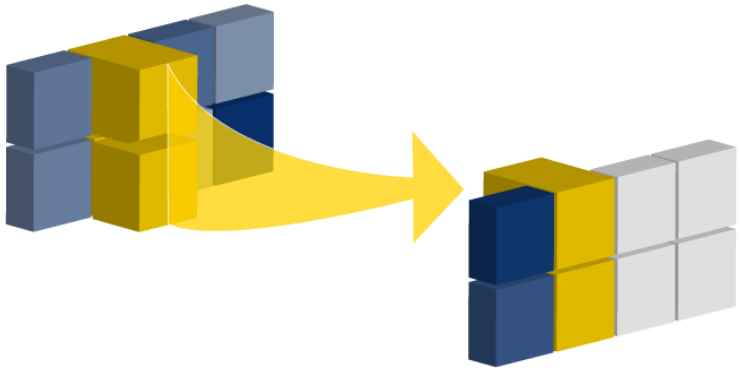


Audit Journal Mapping tracks all updates and changes
- Records
  - Before and after values for every column
  - Type of transaction
  - Type of sending DBMS
  - Table name
  - User name
  - Transaction information
- Records to flat file or to database table
- Can assist with SOX, HIPPA , GDPR audit requirements

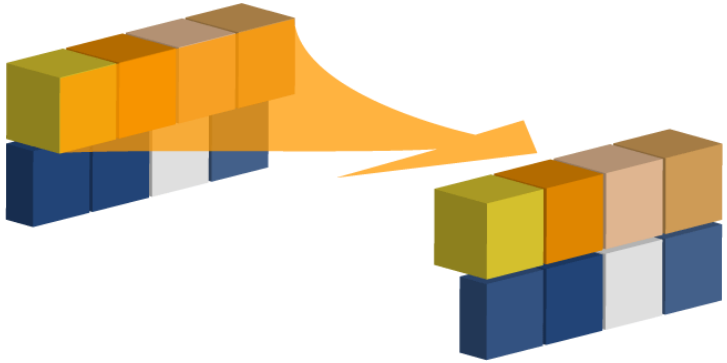
Lets You Share Exactly WHAT You Need

Filters determine what data gets moved

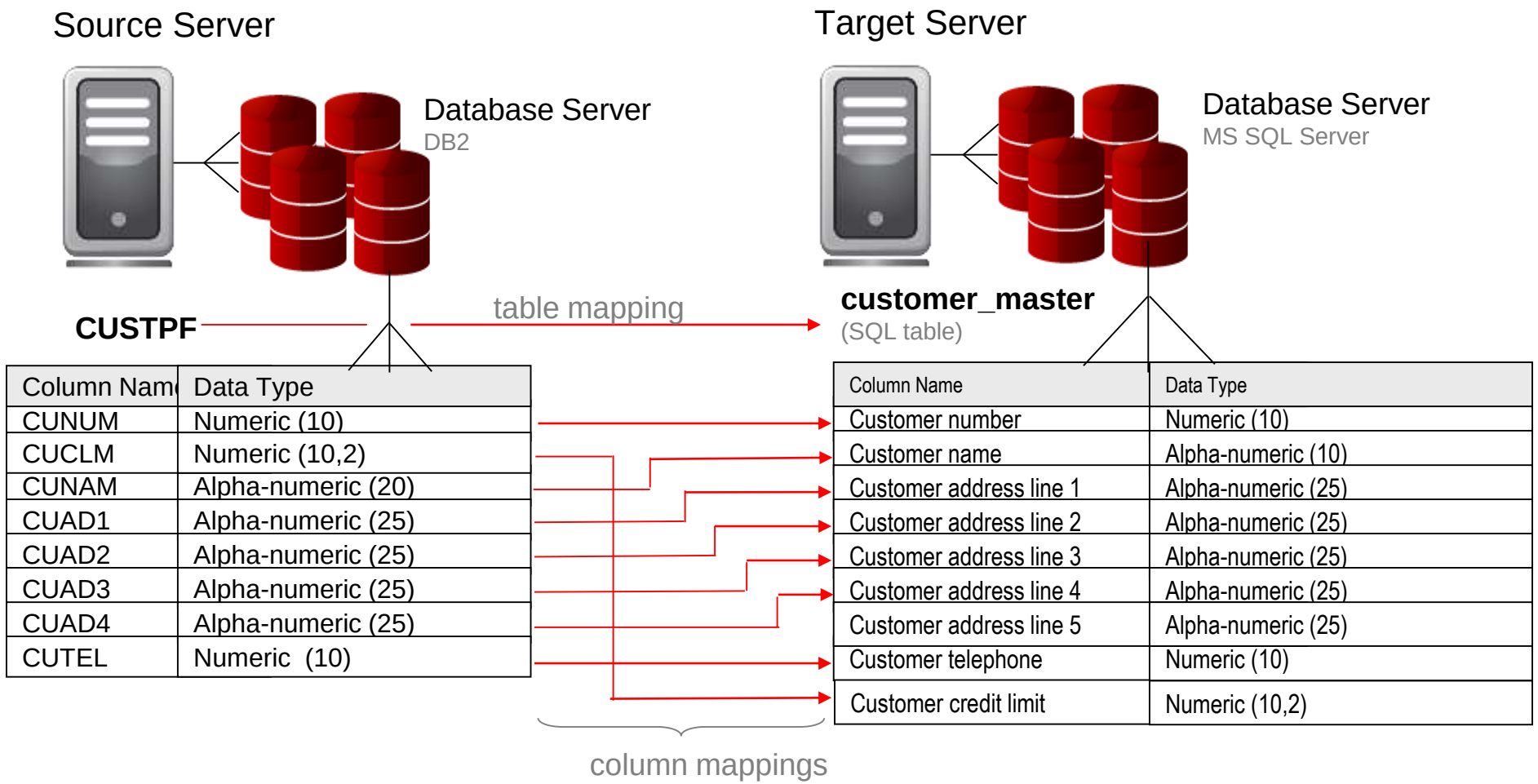
- Select specific column and table
  - eg. Create an new column on target



- Select specific rows and table
  - eg. Gate condition, split to different target DB



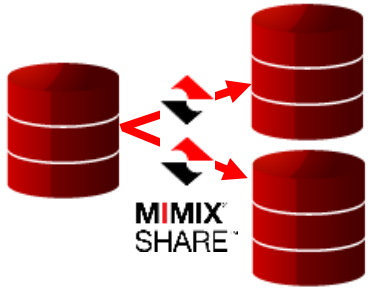
Mapping Columns Example



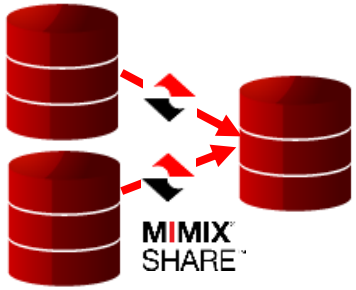
Flexible Replication Options

One Way

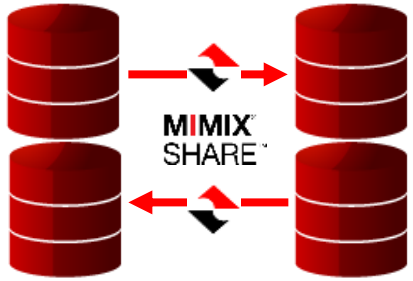
Distribute



Consolidate

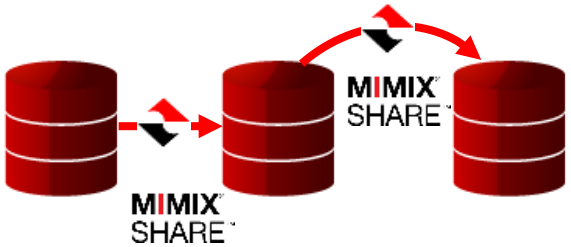


Choose a topology or combine them to meet your data sharing needs



Two Way

Bi-Directional



Cascade

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Supports a Broad Range of Platforms

Leading Operating Systems

- IBM i
- IBM AIX
- HP-UX
- Solaris
- IBM Linux on Power
- Linux SUSE Enterprise
- Linux Red Hat Enterprise
- Microsoft Windows, including Microsoft Azure

Leading Databases

- IBM DB2 for i
- IBM DB2 for LUW
- IBM Informix
- Oracle
- Oracle RAC
- MySQL*
- Microsoft SQL Server
- Teradata*
- Sybase

**** Target only***

MIMIX Share Use Cases

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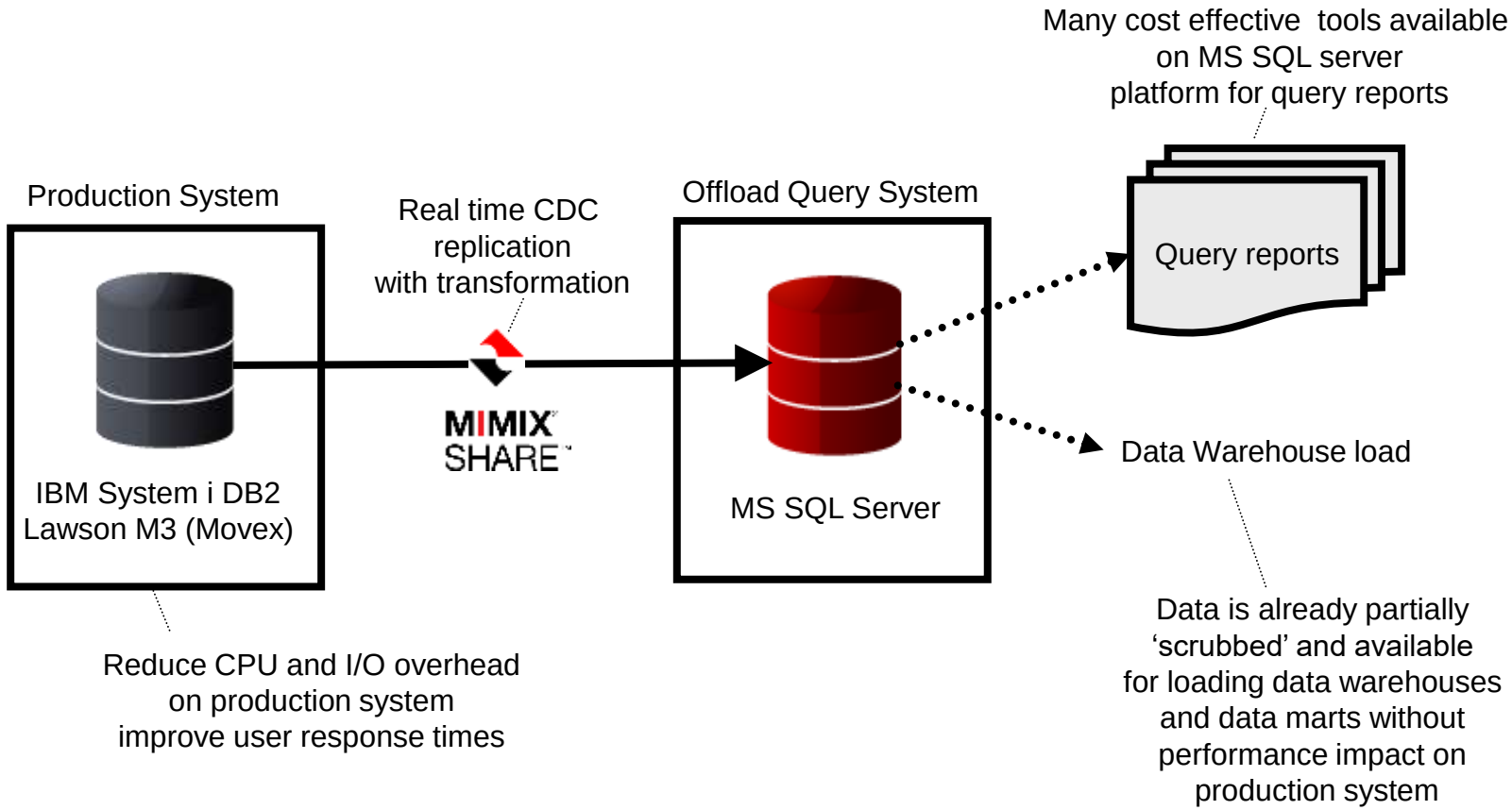
Use Case:
Offload Reporting from Production Database

Retail Company



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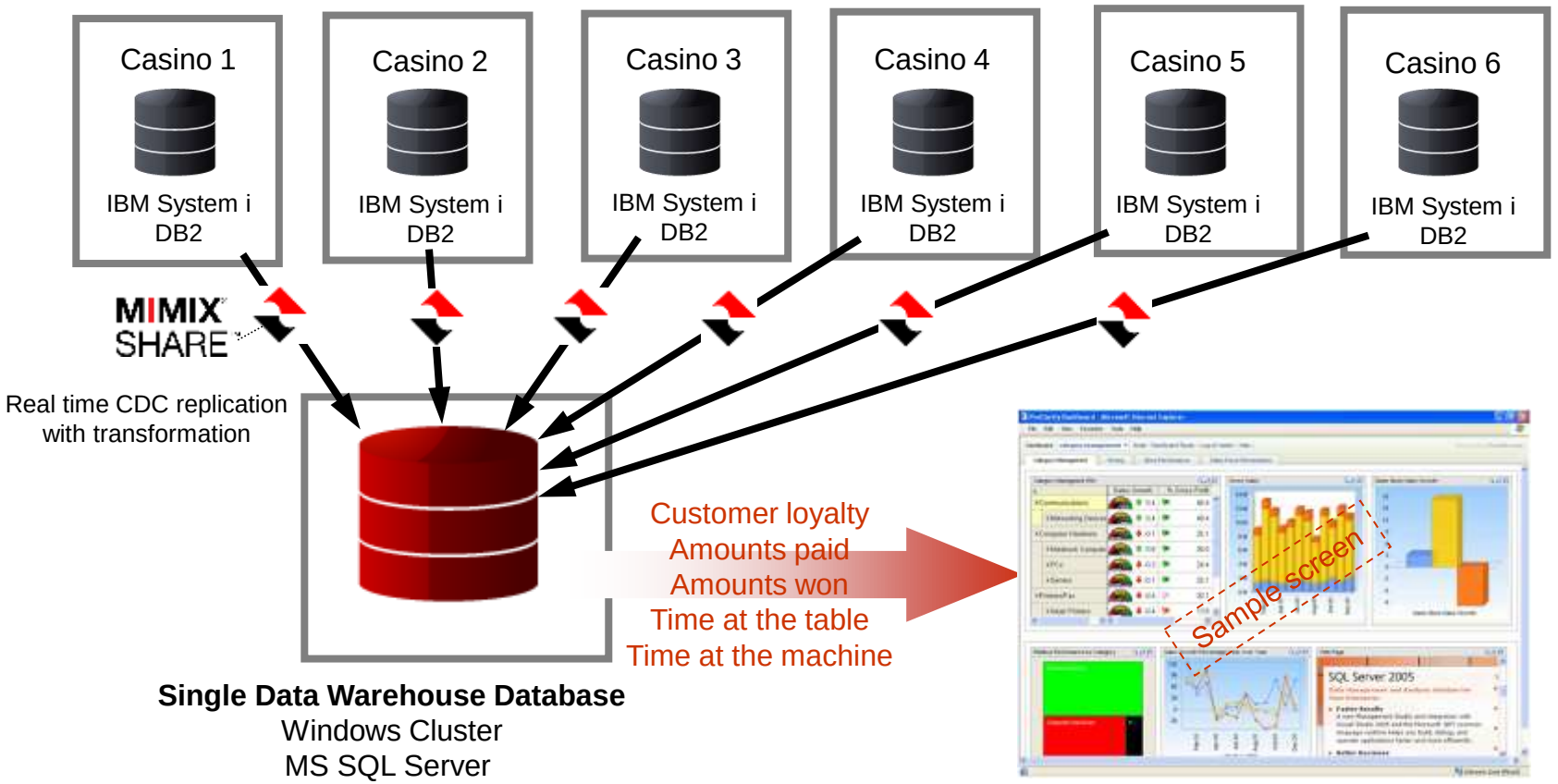
Use Case:
Centralized Reporting

Gambling



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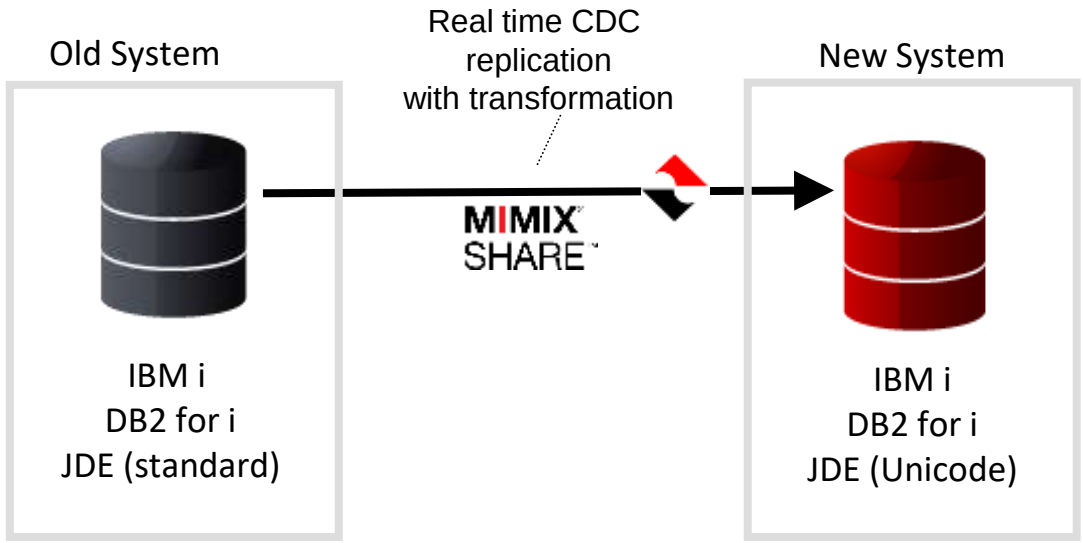
Use Case:
Database Migration

Manufacturing Company



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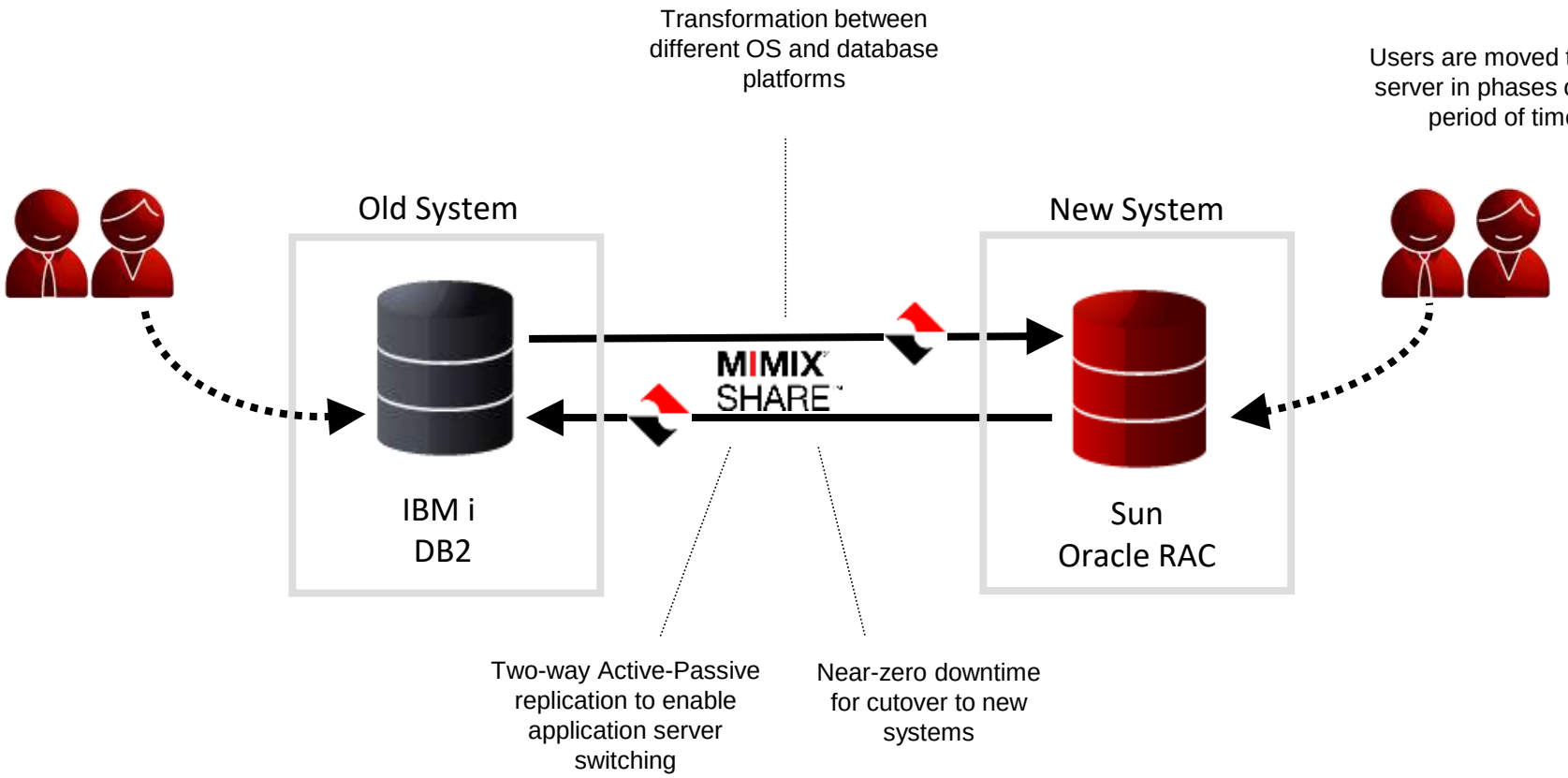
Use Case:
Database Replatforming

Insurance Company



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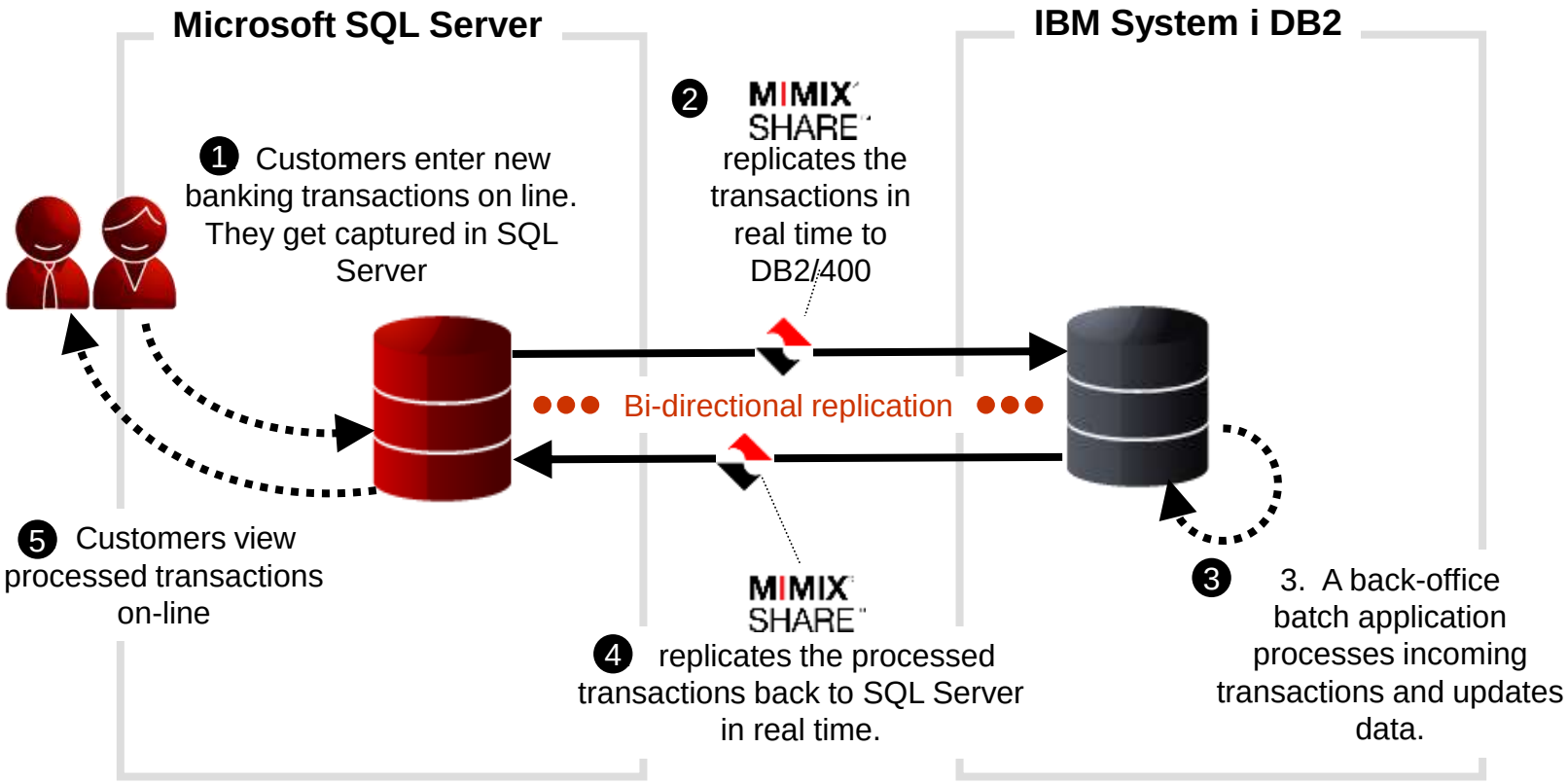
Use Case
Application Integration

On-Line Banking



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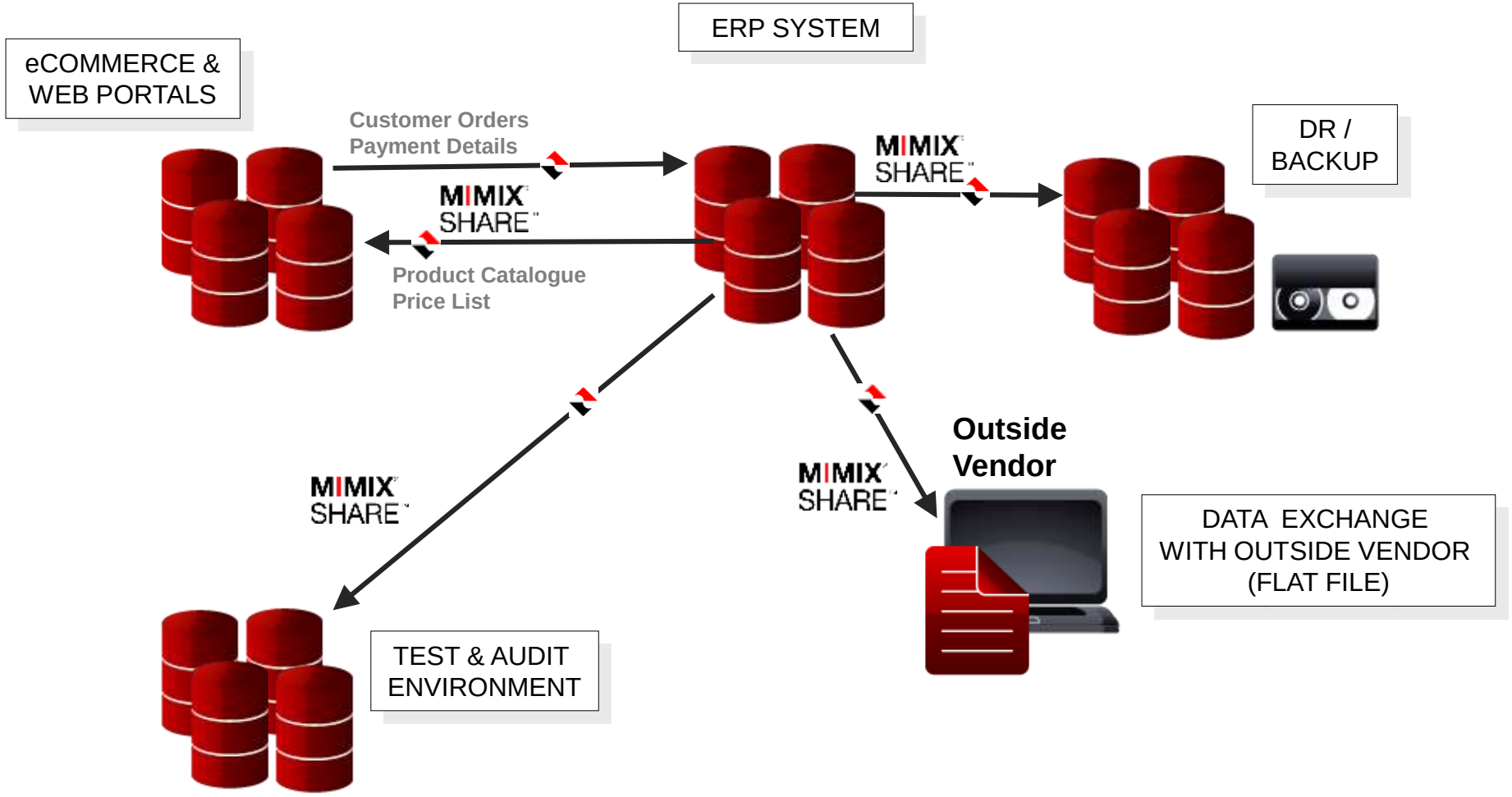
Additional Use Cases

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