ProSync 4 Introduction

Contents

Chapter 1

ProSync Introduction

Data Synchronization Solution: ProSync

TMAX Tibero

Real-time two-way data synchronization solution

Real-Time CDC solution that extracts and processes changes in the source system and reflects them in the target

Source System

DBMS

Archived Logs   Redo Logs

Extract

Prosync

Direct Log Reader → DD Image

Target System

Parallel application of DML and DDL operations through multiple sessions

Apply

DBMS
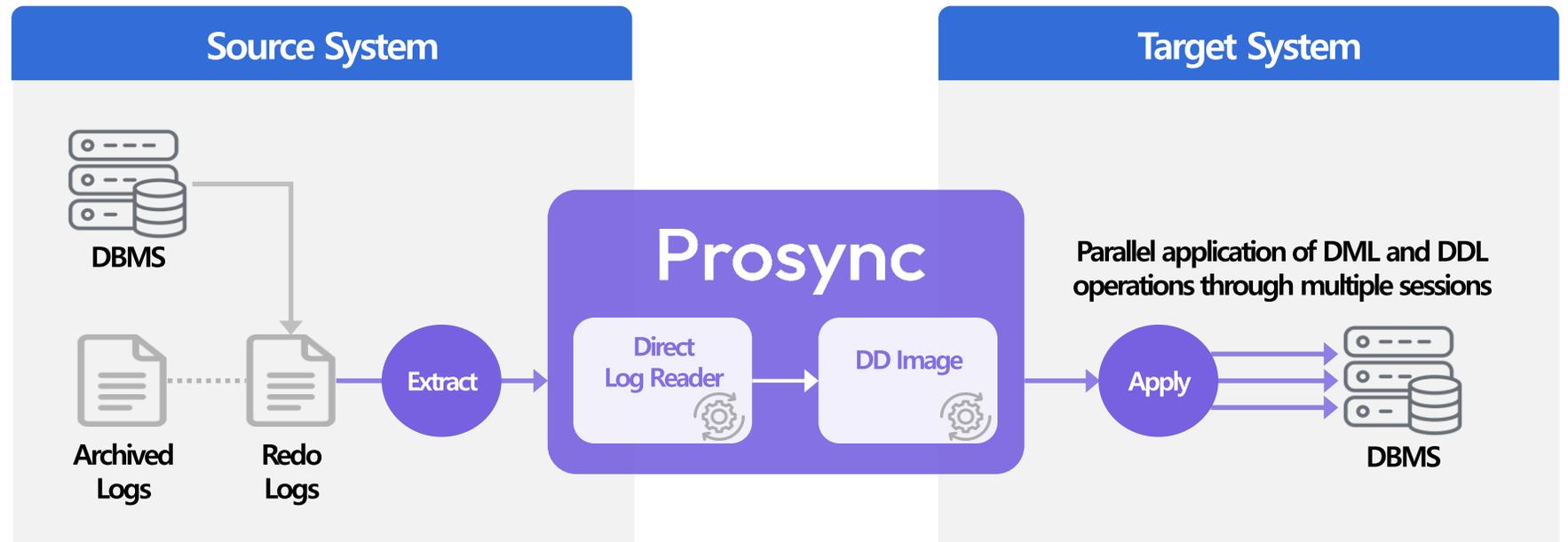
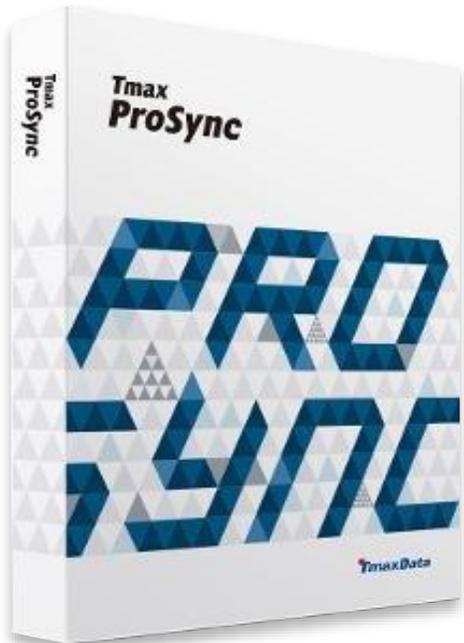| Real-time extraction of changed data	Process extracted data	Real-time reflection on target system
• Detect changes in DB log files • Transmission of only changed data	• Modification/Aggregation of extracted data • Data queuing with guaranteed order	• TIBERO, ORACLE, PostgreSQL • Ensuring consistency of reflected data

ProSync Key Features

CDC synchronization solution that guarantees high performance, stability, convenience, and efficiency

✅ High performance

- Real-time & two-way synchronization
- Full support for TAC and RAC
- Supports parallel replay for large-scale processing
- User filtering

✅ Stability

- Verify and Repair functions for synchronization consistency checking
- Network-level encryption and compression
- Active-Standby high availability support (Replication)

✅ Convenience

- Provides resource monitoring and convenient operation through a web GUI admin tool
- Automatic application of DDL syntax to target DB
- Mapping & conversion support

✅ Efficiency

- Initial data loading function support
- Direct SQL input or SAM file loading selectable depending on the target DB environment
- Customization for data conversion requirements

ProSync

Supports real-time data synchronization by extracting, transferring, and loading changed data based on transaction logs

Direct Reader

TMAXTibero

Direct Reader extracts real-time changed data directly from Redo logs with minimal resource usage, ensuring optimal performance and minimal engine load

Source DB

RDBMS

Logs

DDL

DML

Redo capture

ProSync

**Direct Reader**

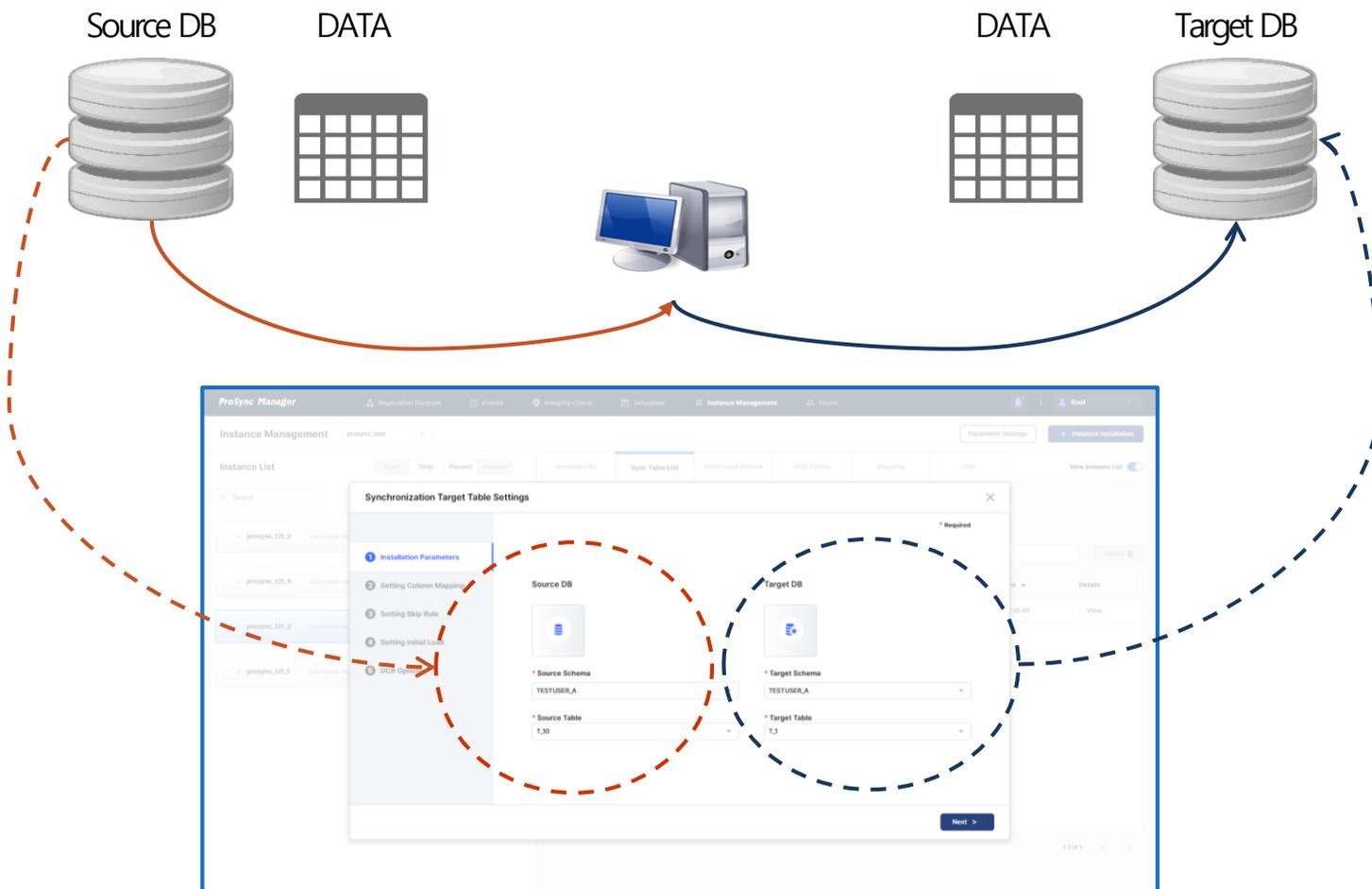**Target DB**

RDBMS

Data application
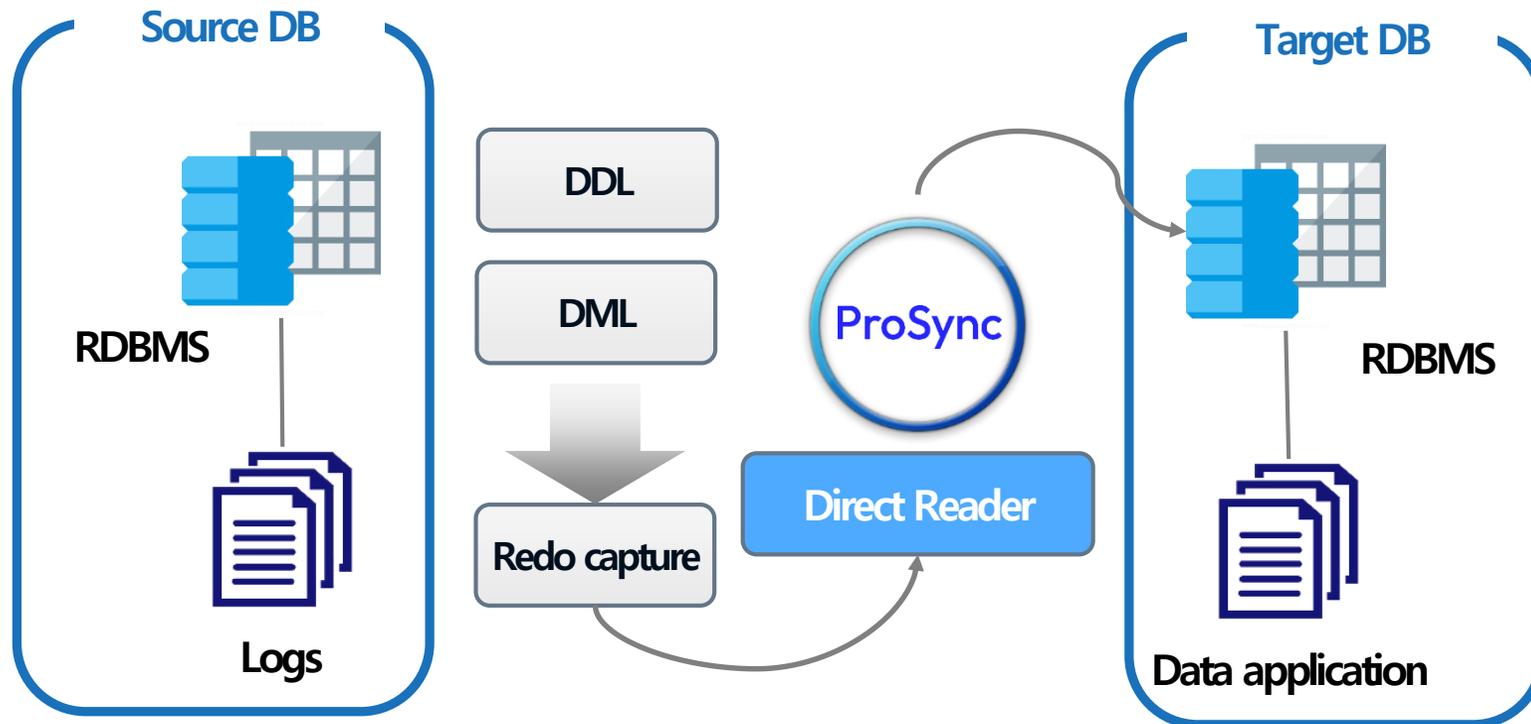
Minimizes engine load

- Extracts changed data in real time by directly reading Redo logs with minimal resource usage via Direct Reader

- Extracts Redo logs with minimal impact on the source database

⇒ **Provides real-time and high-performance synchronization**

Two-way synchronization

Enables real-time two-way synchronization between TAC-based sites, with each ProSync instance extracting Redo logs from its respective node for seamless data consistency

Supports initial and incremental data loading
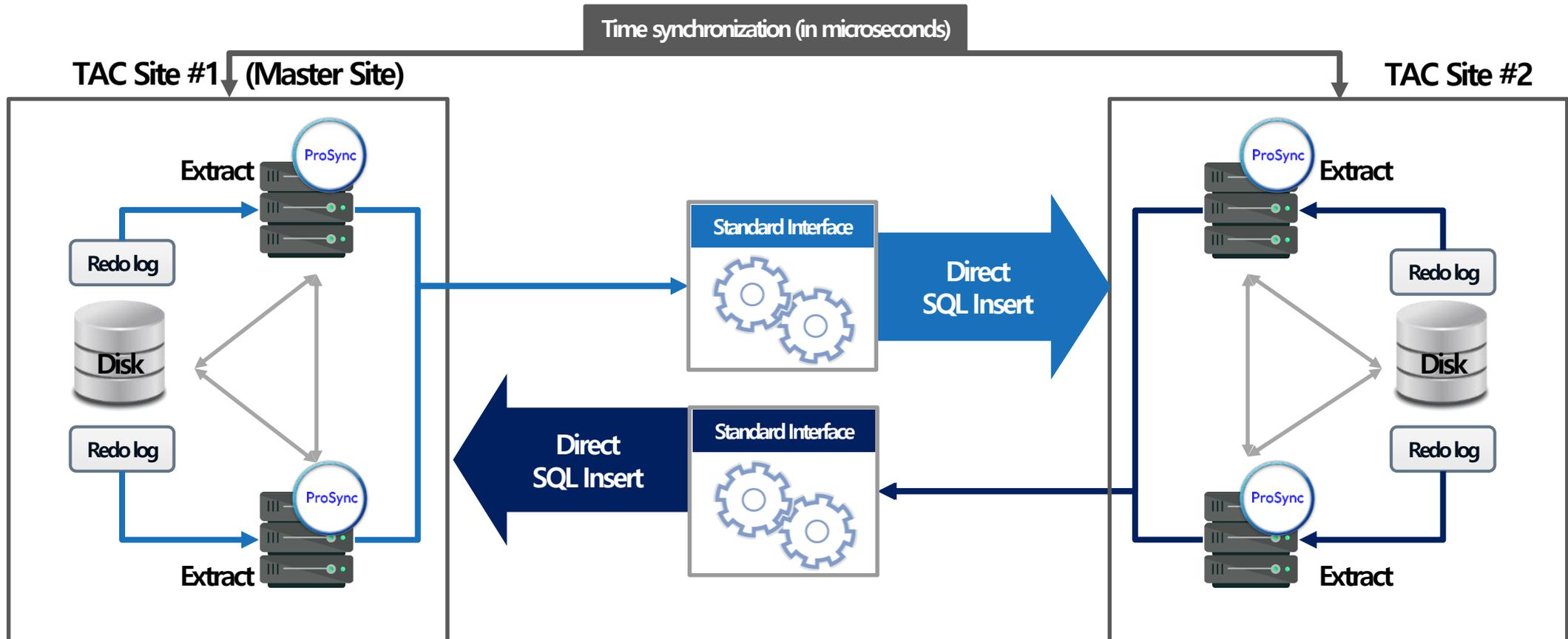
Enables initial and incremental data migration without downtime using ProSync Manager

Source DB   DATA   DATA   Target DB

Loading order

① Project management – Select Add Table from the synchronization table list, then select the source and target schemas and tables

② Set column-by-column mapping options from source to target

③ Set synchronization settings by column using skip conditions and values

④ Select whether to perform initial loading and target DB initialization, then load data

Parallel replay for high-volume transaction processing

TMAXTibero

Apply Process Control Thread analyzes dependencies within the transaction list and between transactions, creating multiple threads to enable parallel replay
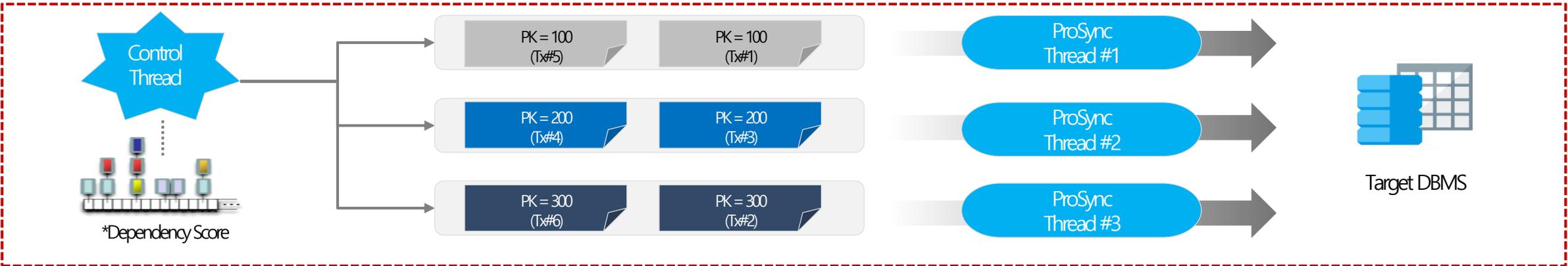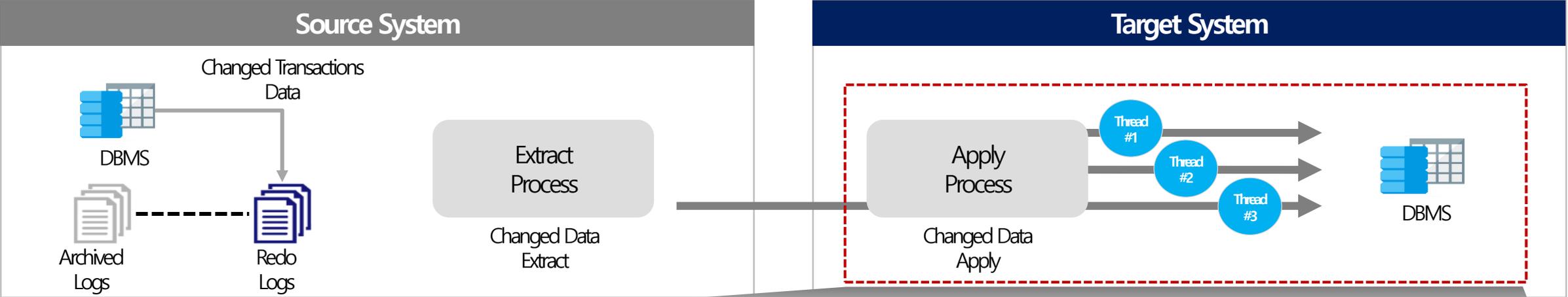
*Dependency Score: A result value derived from mutual correlation analysis between transactions

Supports various business logic implementations

TMAX Tibero

Enables fast, real-time one-way and two-way replication while minimizing source load and supporting diverse target-specific business logics

Peer to Peer

One-way

DBMS → DBMS

Two-way

DBMS ↔ DBMS

DBMS, DBMS, DBMS (Peer to Peer)

Broadcasting

DBMS → DBMS, DBMS, DBMS, DBMS

Consolidation

DBMS, DBMS, DBMS, DBMS → DBMS

Active-Active Cluster Support
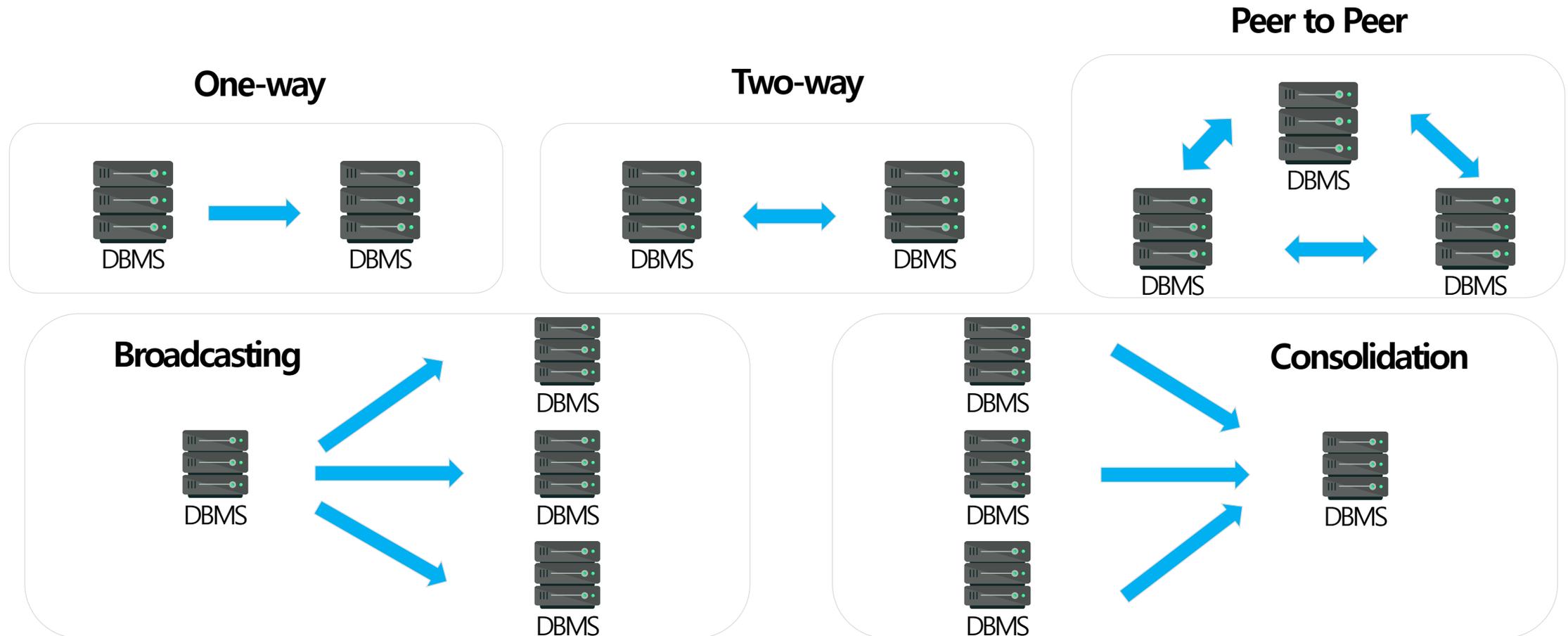
Ensures seamless data synchronization on Active Cluster source databases, maintaining complete data consistency even during DB outages

Active-Active Cluster Support	TAC (RAC) failover support
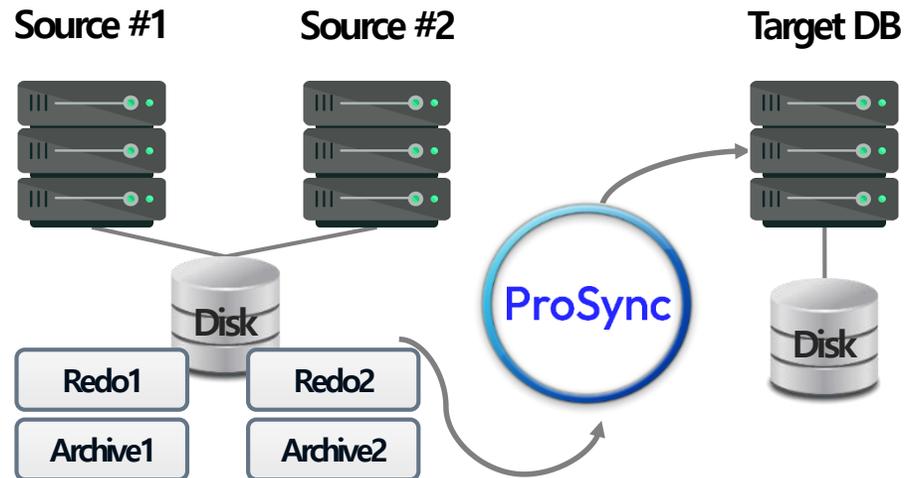
- Tibero TAC, Orade RAC support
- Extracts logs from two nodes and applies them to the target DB while maintaining data consistency in the ProSync engine
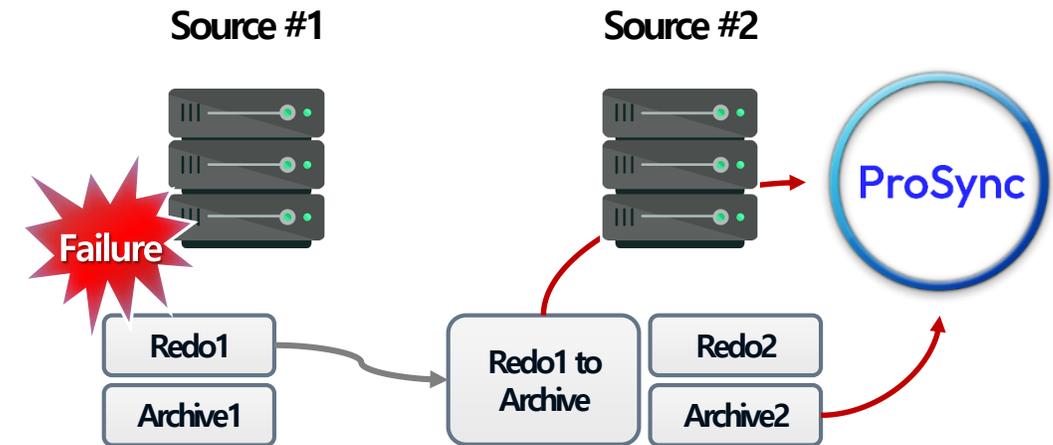
- In the event of a single Orade RAC node failure, the recovery node extracts data from the failed node
- In case of a Tibero TAC node failure, ProSync Agent ensures uninterrupted Redo log extraction.

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Synchronization Pause and Scheduling

Provides pause and scheduling features to manage Source or Target DB load and ensure stable operation
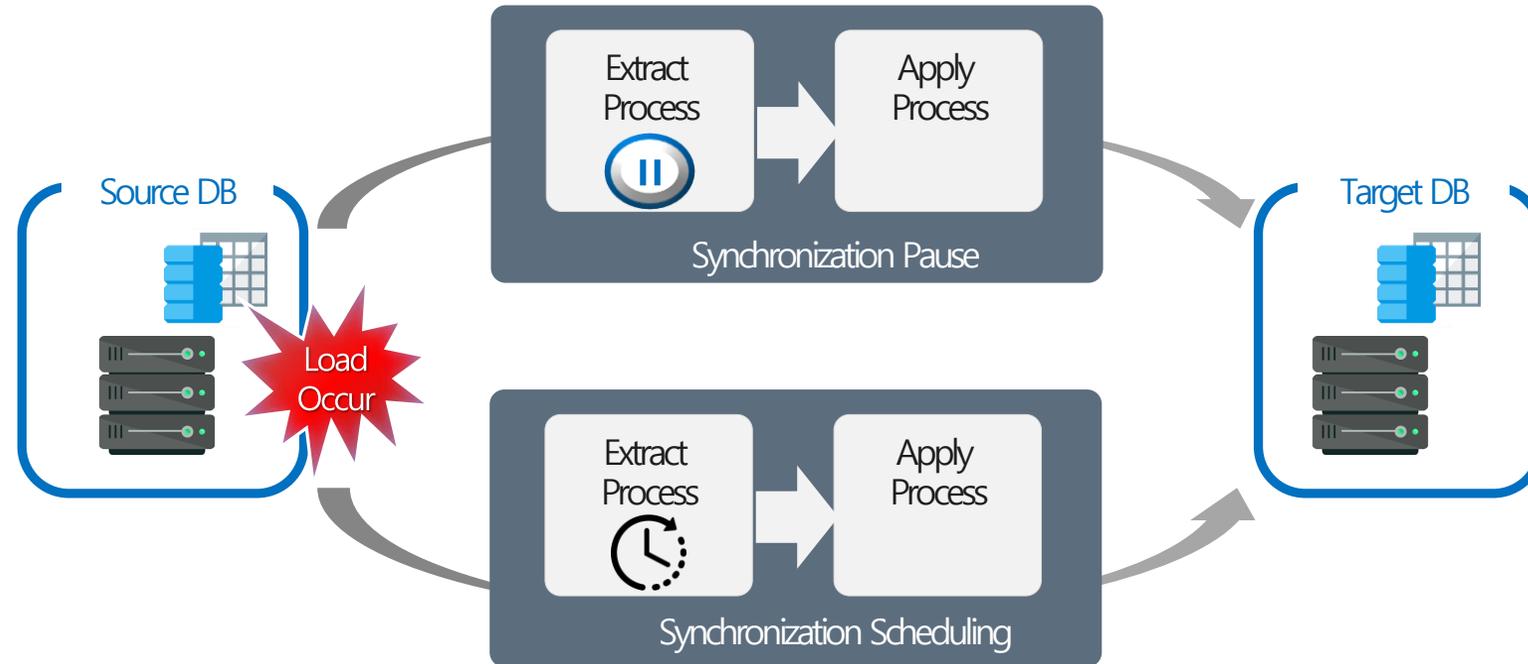
- **Pause: Automatically pauses synchronization when Source or Target DB is overloaded and resumes later to optimize load distribution**
- **Scheduling: Enables synchronization scheduling during low-load periods on Source and Target DBs, enhancing stability and convenience**

Automatic failure detection and process restart

Improves reliability by detecting diverse failures, preserving ongoing synchronization history, and applying it automatically when processes restart

Source DB

RDBMS

Transaction Level
Redo Log extraction

ProSync

Engine
Failure

Extraction
Failure

**Manager
Process**

Process

Process

⋮

Process

2 Extraction history storage **4** Applied history storage

Send
Failure

Target DB

RDBMS

Transaction and
history table update
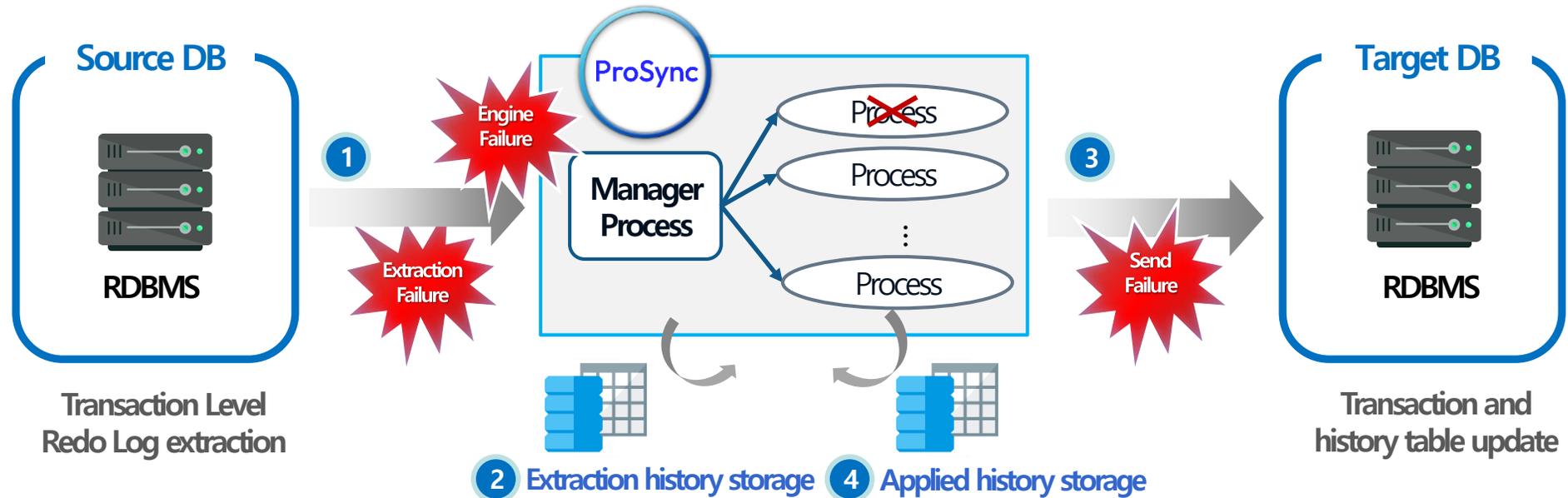
Reliability handling for various failures

- <u>Ensure extraction consistency</u> by verifying extraction history during recovery
- <u>Ensure replication consistency</u> by verifying replication history during recovery

- <u>Provides detection functions</u> for various failures
- <u>Provides process restart functionality</u> in case of failure

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Automatic DDL synchronization

Automatically synchronizes target DB schema when changes occur in the source table, ensuring seamless schema alignment

Source Table A

Name	Gender	Age
Hong Gil-dong	Male	25
Yoo Gwan-soon	Female	19

1 Delete age column

Name	Gender
Hong Gil-dong	Male
Yoo Gwan-soon	Female

ProSync

2 Schema change
Redo detection

3 Automatically
Delete Age Column

Target Table A

Name	Gender	Age
Hong Gil-dong	Male	25
Yoo Gwan-soon	Female	19

4 Schema change

Name	Gender
Hong Gil-dong	Male
Yoo Gwan-soon	Female
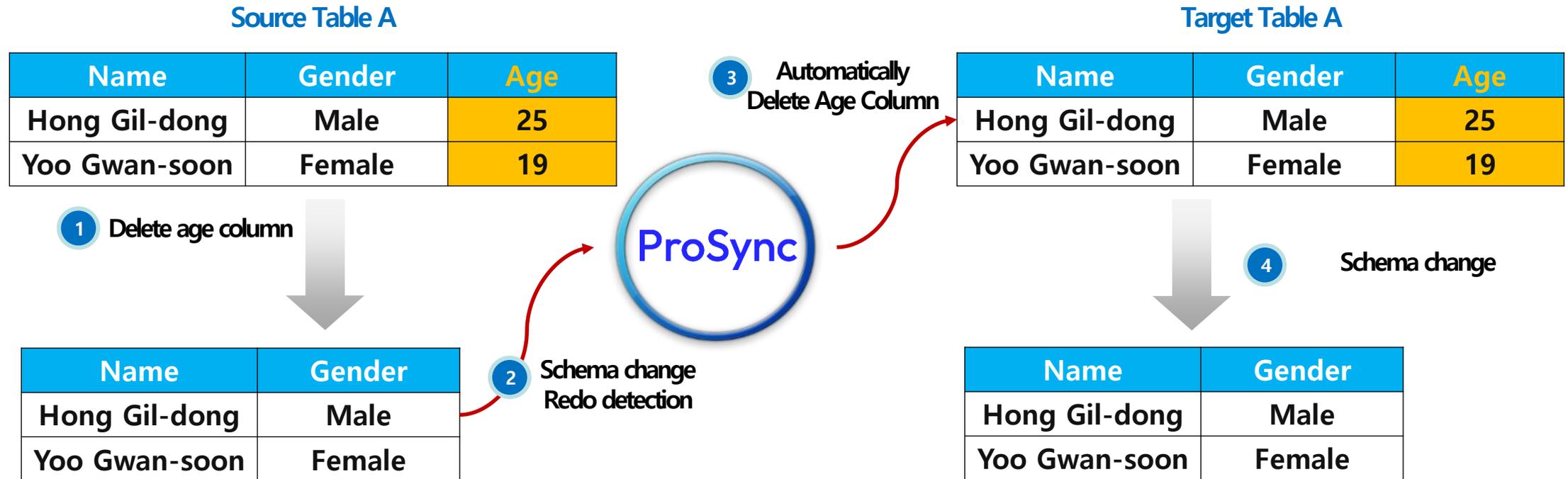
- **Ensures seamless schema alignment by automatically reflecting source table schema changes on the target table during synchronization**

Filtering

By default, you can set the synchronization target by table, and filter by user to meet various synchronization requirements.

Source DB

RDBMS

ProSync

Target DB

RDBMS

Category	Target	Synchronization (Yes/No)
User	User	O
	User	X

AP1, User1

Tx1 Commit → Log storage → ProSync extraction → **Reflect changes in Tx1 data to Target DB**

AP1, User2

Tx2 Commit → Log storage → ProSync extraction

✖ **User Filtering**

AP2, User3

Tx3 Commit → Log storage → ProSync extraction → **Reflect Tx3 data changes in the Target DB**
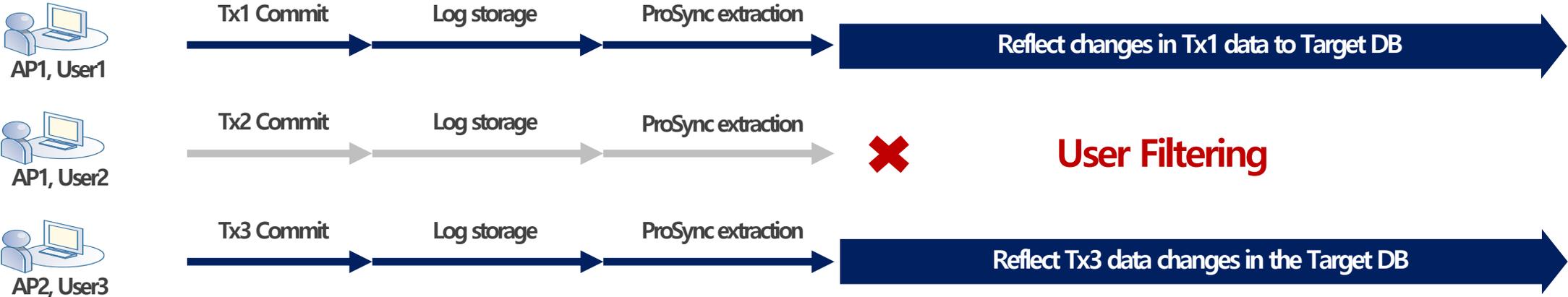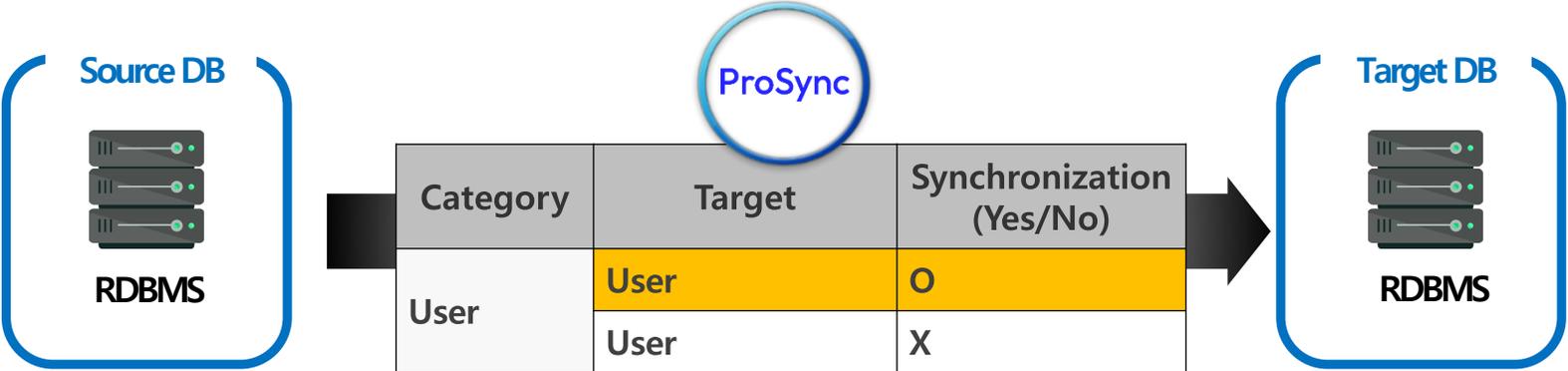
※ However, users are limited to table owners.

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Chapter 2

ProSync Manager (GUI)

GUI Admin Tool: ProSync Manager

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Provided as a Web GUI, ProSync Manager receives information from ProSync Agents installed on each source and target, offering synchronization monitoring and management functions.

Operations and Monitoring

Source — Target — Source — Target ...

Sync — Sync

Agent — Adapter — WAS Server — Http Access — ProSync Manager

ProSync Manager Replication Diagram

TMAXTibero
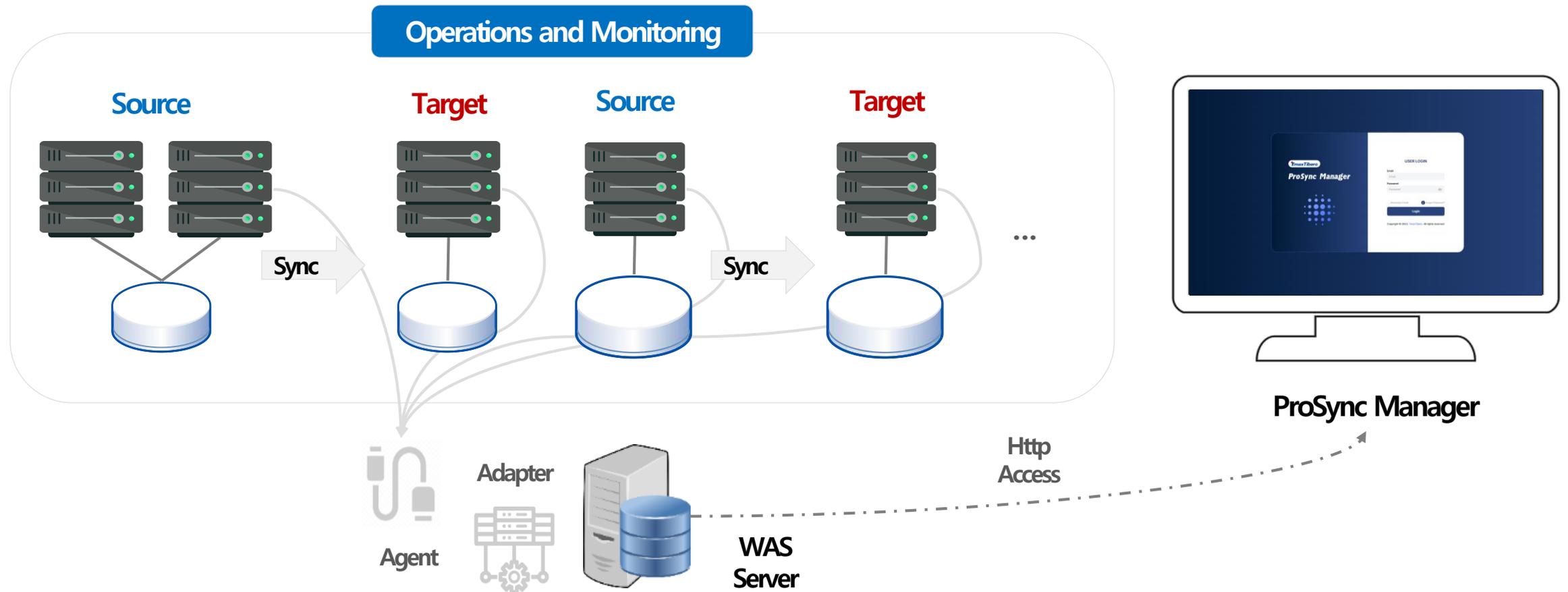
Enables group management by Diagram or Stream and presents process information in an intuitive graph format for quick and accurate insights
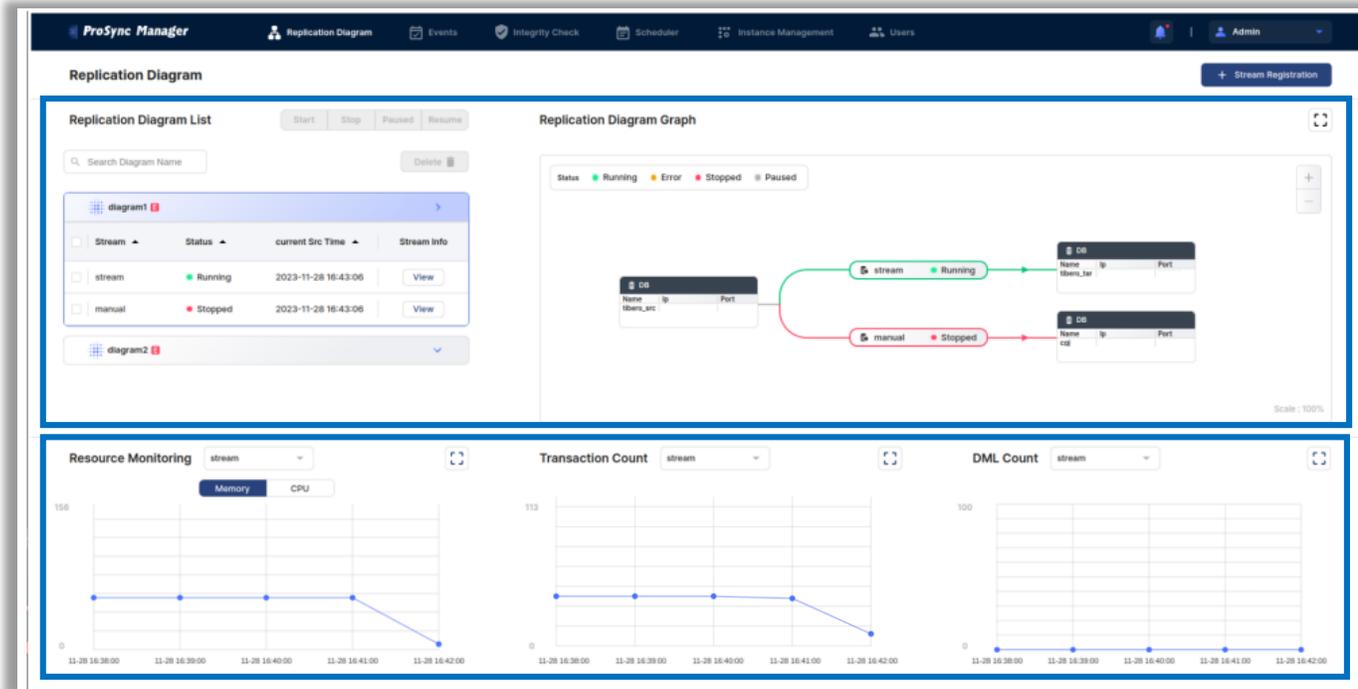
Replication Diagram List
- List of registered Replication Diagrams

Replication Diagram Graph
- View the graph of the selected Replication Diagram from the list

Resource Monitoring
- ProSync resource (memory/CPU) usage

Transaction Count
- Number of transactions synchronized by ProSync

DML Count
- Number of DMLs synchronized by ProSync

Replication Diagram	• Provides a Replication Diagram Graph for registering and managing streams [1] [2]
	• Provides monitoring of resource (memory/CPU) usage, transaction count, and DML count during synchronization

1) Diagram: The largest logical configuration unit within ProSync Manager. Multiple streams can be registered within a single diagram.
2) Stream: A single data flow from the source DB to the target DB. Multiple instances can be installed within a single stream.

Stores logs for each synchronization event, enabling event history review and troubleshooting even in case of failures

Event Filtering Search

Event Email Notification

Event Filter
- Specify diagram and status filter

Event Email Alert Settings
- Set alerts based on duration, user, and status

SMTP settings

Events	• Classifies and provides intuitive status information by event level, instance name, message, occurrence time, and subject
	• Provides Event Filtering Search and Event Email Notification features for troubleshooting

ProSync Manager Integrity Check

Ensures data consistency between specific tables in synchronized Source and Target DBs, with the ability to download and apply SQL fixes when discrepancies occur

Integrity Check Status

Consistency Check Screen

Consistency Check Settings

- Source DB schema, table settings
- Check type and options
- Scheduling Options
- Where clause check conditions

Integrity Check	• **Manage registered integrity checks by filtering specific Streams and Statuses**
	• **Schedule checks at regular intervals or at specific times**

ProSync Manager Scheduler

scheduler optimizes system performance by managing synchronization timing for each instance, allowing efficient load control through scheduled start and pause operations

Scheduling Registration Screen

Scheduling Settings

Scheduling status types

Scheduling History Status
- Status types can be checked

| Scheduler | • Enables periodic or off-peak synchronization via scheduling for efficient resource management |
| | • Can easily monitor current states by filtering specific Instances and Statuses through the History tab |

ProSync Instance Management

TMAXTibero

Monitor synchronization status, table lists, initial load history, and easily manage DML conflict prevention, table mappings and DDL synchronization through Instance Management
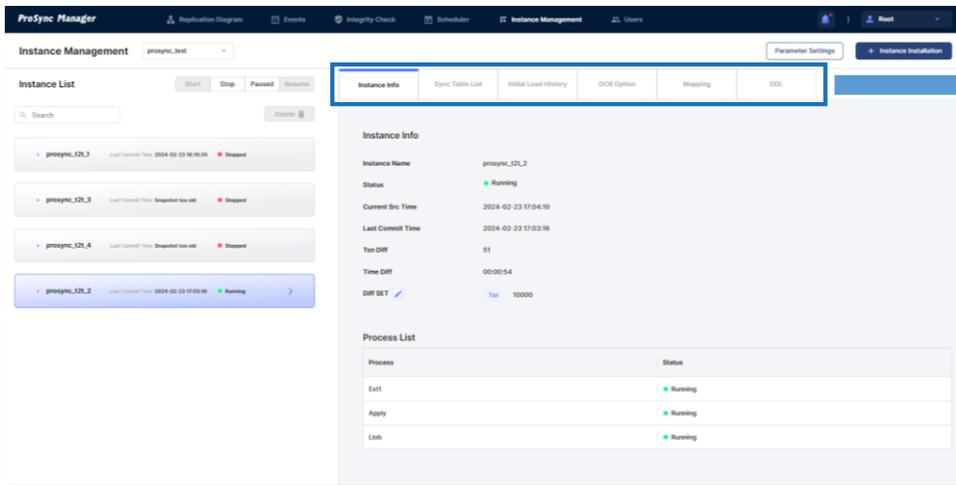
Instance Management screen

| Instance Info | Sync Table List | Initial Load History | DCR Option | Mapping | DDL |

View instance information
- Instance name, status,
  Delay Status, Process Status, etc.

Synchronization Table Information
- Table schema, name,
  Column information, index information, etc.

Initial load history information
- Check synchronization table status
  (table name, schema, progress, etc)

Set two-way DML conflict prevention
- DML for two-way consistency
  Set priority in case of collision

Check and modify table mapping information
- Target schema, target table,
  Data Type, Skip Rule, etc.

Set DDL synchronization scope
- DDL to include or exclude during
  synchronization

| **Instance Management** | • **Monitors instance sync delays by TSN/time and table details**
• **Flexibly manage table mappings, DML conflicts, and DDL synchronization** |

Chapter 3

Product Comparison: Domestic vs. Global

Comparison (vs. overseas competitors) (1/2)

TMAX Tibero

	Features	ProSync	OGG (Oracle GoldenGate)	SharePlex
Platform	Supports replication between multiple platforms	• **Support**	• Support	• Support
	Replication target and unit	• **All or some tables**	• All or some tables	• All or part of tables
	Construction type	• **1:1, 1:N, N:1, N:N**	• 1:1, 1:N, N:1, N:N	• 1:1, 1:N, N:1, N:N
	Monitoring and management	• **Web GUI-based**	• Client Server GUI-based	• Client-server GUI-based
Sync Level and Method	Synchronization Method	• **Real Time** • **Commit Data**	• Real Time • Commit Data	• Real Time • Commit Data
	Capture method	• **Redo/Archive Log Based**	• Redo/Archive Log Based	• Redo/Archive Log Based
	Shared disk-based DB Replication (TAC or RAC)	• **RAC** • **TAC**	• RAC • TAC	• RAC • TAC
	Two-way synchronization	• **Support**	• Support	• Support
	Synchronization verification	• **Support**	• Support	• Support
	Synchronization correction	• **Support**	• Support (separate license)	• Support

Comparison (vs. overseas competitors) (2/2)

TMAX Tibero

Features		ProSync	OGG (Oracle GoldenGate)	SharePlex
Mapping & Conversion	Object	• **Table**	• Table	• Table
	Data Type	• **Provided**	• Provided	• Provided
	Encrypted replication	• **Support**	• Support	• Support
	DDL change handling	• **Automatic**	• Automatic	• Automatic
Additional Functions	Initial Loading	• **Support**	• Provided	• Provided
	Segment compression	• **Support**	• Support	• Support
	User filtering	• **Support**	• Support	• Support
	Add load target tables	• **Support**	• Support	• Support
	Customization	• **Yes**	• Possible	• Not
Technical Support	Technical Support	• **Domestic**	• Overseas	• International
	GS Certification and Procurement Registration Status	• **Available**	• Not	• Available

Comparison (vs. domestic competitors) (1/2)

Features		ProSync	X-Log	Silcroad
Platform	Supports replication between multiple platforms	• **Support**	• Support	• Support
	Replication target and unit	• **All or some tables**	• All or some tables	• All or part of tables
	Construction type	• **1:1, 1:N, N:1, N:N**	• 1:1, 1:N, N:1, N:N	• 1:1, 1:N, N:1, N:N
	Monitoring and management	• **Web GUI-based**	• Web GUI-based	• Client Server GUI-based
Sync Level and Method	Synchronization Method	• **Real Time** • **Commit Data**	• Real Time • Commit Data	• Real Time • Commit Data
	Capture method	• **Redo/Archive Log Based**	• Redo/Archive Log Based	• Redo/Archive Log Based
	Shared Disk-based DB Replication (TAC or RAC)	• **RAC** • **TAC**	• RAC • TAC	• RAC • TAC
	two-way synchronization	• **Support**	• Support	• Support
	Synchronization verification	• **Support**	• Support	• Support
	Synchronization correction	• **Support**	• Support	• Support

Comparison (vs. domestic competitors) (2/2)

TMAXTibero

Features		ProSync	X-Log	Silcroad
Mapping & Conversion	Object	• **Table**	• Table	• Table
	Data Type	• **Provided**	• Provided	• Provided
	Encrypted replication	• **Support**	• Support	• Support
	DDL change handling	• **Automatic**	• Automatic	• Automatic
Additional Functions	Initial Loading	• **Support**	• Provided (other tools)	• Provided
	Segment compression	• **Support**	• Support	• Support
	User filtering	• **Support**	• Support	• Support
	Add load target tables	• **Support**	• Support	• Not supported
	Customization	• **Yes**	• Available	• Available
Technical Support	Technical Support	• **Domestic**	• Domestic	• Domestic
	GS Certification and Procurement Registration Status	• **Provided**	• Support	• Provided

Chapter 4

References

TMAX Tibero

Date	Client	Project Name	note
2024-12-30	National Radio Research Agency	National Radio Research Agency Radio Broadcasting and Telecommunications System Enhancement ProSync Additional Purchase	ProSync 4 (two-way)
2024-12-10	Korea Institute of Intelligent Information Society Promotion	Public Data Open System Infrastructure Construction Project (ProSync)	ProSync 4 (two-way)
2024-11-01	National Information Resource Management Agency	2024 First Information Resource Integration Construction Project SW Direct Purchase 13 (Daejeon)	ProSync 4 (two-way)
2024-10-31	National Radio Research Agency	Radio Broadcasting and Telecommunications System Enhancement Project, Year 1 Commercial Software Purchase	ProSync 4 (two-way)
2024-07-02	National Information Resource Management Agency	2024 First Information Resource Integration Construction Project Software Direct Purchase 13 (Daejeon) - Orchestro (A)	ProSync 4 (two-way)
2024-05-28	Ministry of Environment	Procurement Agency Digital Service Mall Product Purchase Request (Software)	ProSync 4 (two-way)
2024-04-09	Korea Regional Information Development Institute	Next-Generation Local Tax Revenue Information System DBMS Software Separate Procurement	ProSync 4 (two-way)
2023-12	Ministry of Environment	Ministry of Environment Homepage DB Synchronization Software (Prosync)	ProSync 4 (two-way)
2023-12	Korea Occupational Safety and Health Agency	Purchase of Database Synchronization Software	ProSync 4 (two-way)
2023-11	Korea Regional Information Development Institute	Next-Generation Local Tax Revenue Information System DBMS Software Separate Procurement	ProSync 4 (two-way)
2023-10	National Information Resource Management Agency	2023 Second Round of Government-wide Information Resource Integration Project SW Direct Purchase 8 (Daejeon)	ProSync 4 (two-way)

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Date	Client	Project Name	note
2023-08	National Information Resource Management Agency	2023 First Phase of Government-wide Information Resource Integration Project Direct Purchase (Daejeon) - Ministry of Interior and Safety - Disaster Management Resource Integration Management	ProSync 4 (two-way)
2023-08	National Information Resource Management Agency	2023 First Round of Government-wide Information Resource Integration Project Software Direct Purchase 8 (Daejeon) - Ministry of Justice - Intelligent Legal Services Platform	ProSync 4 (two-way)
2023-08	Incheon International Airport Corporation	Phase 4 Air Traffic Communication Facilities Purchase and Installation Project (DBMS)	ProSync 4 (two-way)
2023-07	National Information Resource Management Agency	2023 First Round of Government-wide Information Resource Integration Project Software Direct Purchase 8 (Daejeon)	ProSync 4 (two-way)
2023-05	Legislative Affairs Agency	Ministry of Legislation 2023 Government Legislation System Operation Data Synchronization Construction	ProSync 4 (two-way)
2023-02	Korea Regional Information Development Agency	Next-Generation Local Tax Revenue Information System DBMS Software Separate Procurement	ProSync 4 (two-way)
2023-02	Korea East-West Power	Purchase of Tibero License for Integrated DB Infrastructure Construction (ProSync)	ProSync 4 (two-way)
2022-12	Ministry of National Defense	Next-Generation Defense Broadband Communication Network (M-BcN) Construction Project	ProSync 4 (two-way)
2022-11	Incheon Metropolitan City Hall	Intelligent Transportation System (ITS) Construction Project Commercial Software, etc. Procurement_Prosync	ProSync 4 (One-Way)
2022-11	Ministry of Justice	Purchase of Commercial Software Licenses for the Government Legislation System	ProSync 4 (two-way)
2022-11	Defense Acquisition Program Administration	KJCCS Minor Enhancement Project (Free of Charge)	ProSync 4 (two-way)

Date	Client	Project Name	note
2022-10	Korea Environment Corporation	Prosync Purchase Order	ProSync 4 (One-way)
2022-06	Korea Regional Information Development Institute	Next-Generation Local Tax Revenue Information System DBMS Software Separate Procurement	ProSync 4 (two-way)
2021-11	Ministry of Justice	2021 Ministry of Legislation and Human Rights National Legal Information System Enhancement	ProSync 4 (two-way)
2021-11	Korea Post	DX-based Next-Generation Education Platform Construction Commercial Software Purchase	ProSync 4 (two-way)
2021-08	Health Insurance Review & Assessment Service	E-Evaluation Data Submission System Infrastructure Enhancement	ProSync 4 (One-Way)
2021-08	Korea Regional Information Development Institute	Next-Generation Local Tax Revenue Information System DBMS Software Separate Procurement	ProSync 4 (two-way)
2021-06	Incheon International Airport Corporation	Phase 4 Air Traffic Communication Facilities Procurement and Installation Project (DBMS)	ProSync 4 (two-way)
2021-06	National Information Resource Management Agency	2021 First Government-wide Information Resource Integration Project HW1 Prosync	ProSync 4 (two-way)
2020-12	Defense Acquisition Program Administration	KJCCS Minor Enhancement Project	ProSync 4 (two-way)
2019-11	Ministry of Interior and Safety	Disaster Safety Communication Network A Project Area Construction, Operation, and Maintenance	ProSync 4 (two-way)
2019-09	National Intelligence Service	000 System Construction	ProSync 4 (One-Way)

Date	Client	Project Name	note
2019-05	National Health Insurance Service	Purchase of DBMS for Next-Generation Health Screening Cloud Platform	ProSync 4 (two-way)
2019-04	National Railroad Corporation	Purchase and Installation of KR LTE R for the Wonju-Jecheon Double-Track Electric Railway Integrated Wireless Network	ProSync 4 (two-way)
2019-01	National Information Resource Management Agency	2018 First Round of Government-wide Information Resource Integration Construction Software 3-Party Unit Price 1 (National Radio Research Agency Prosync)	ProSync 4 (two-way)
2018-12	Ministry of Interior and Safety	Disaster Safety Communication Network A Project Area Construction, Operation, and Maintenance	ProSync 4 (two-way)
2018-12	National Information Resource Management Agency	2018 First Round of Government-wide Information Resource Integration Construction SW 3-Party Unit Price 1	ProSync 4 (two-way)
2018-10	Legislative Affairs Agency	Introduction of a Real-time Data Synchronization (Replication) Solution for National Legal Information	ProSync 4 (two-way)
2018-10	Ministry of Environment	Integrated Website Migration to G Cloud	ProSync 4 (two-way)
2018-09	Ministry of Foreign Affairs	Construction of an Integrated Electronic Administrative System for Overseas Koreans (G4K)	ProSync 4 (One-way)
2018-05	National Information Resource Management Agency	2018 1st Government-wide Information Resource Integration Construction SW 3rd Party Unit Price 1	ProSync 4 (Two-Way)
2018-03	Maritime Police Agency	Expansion and Construction of the Integrated Disaster and Safety Information System	ProSync 4 (Two-Way)
2018-02	National Car Rental Mutual Aid Association	Upgrading and Expansion of the Periodic System	ProSync 4 (Two-Way)

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Date	Client	Project Name	note
2017-07	Ministry of Interior and Safety	Government Directory Framework Construction	ProSync 4
2017-05	Ministry of Justice	Construction of Incheon Airport Automatic Immigration Emergency Screening System (Integrated Procurement)	ProSync 4
2016-12	Incheon International Airport Corporation	Phase 3 Air Traffic Communication Facilities Purchase and Installation Project	ProSync 2.0
2016-09	Ministry of Environment	2016 Chemical Substance Information Processing System Upgrading	ProSync 3
2016-09	National Health Insurance Service	Improvement of the Other Collection System in Response to the Implementation of the Daily Calculation System for Overdue Payments	ProSync 2.0
2016-05	Defense Acquisition Program Administration	KJCCS (Korea Joint Command and Control System) Performance Improvement 3 Operations (ProSync)	ProSync2.0

Finance Reference (1/2)

Date	Client	Project Name	note
2024-10	Mirae Asset Securities Co., Ltd.	Vietnam ProSync Implementation	ProSync 4 (Two-Way)
2023-12	IBK Systems Co., Ltd.	IBK Systems ELA	ProSync 4 (Two-Way)
2023-12	Shinhan Bank Co., Ltd.	ULA 4th Contract	ProSync 4 (One-way)
2023-03	KB National Card Co., Ltd.	Thailand DW CDC Construction Project	ProSync 4 (One-way)
2021-09	Shinhan DS (A)	Tmax Group Product Line Introduction Goods Supply Contract (CLOUD)	ProSync 4 (One-Way)
2020-09	Shinhan Bank Mexico	Shinhan Bank Mexico ProSync	ProSync 4 (One-way)
2020-04	Korea Fund Service Co., Ltd.	Real-time synchronization system construction	ProSync 4 (One-way)
2019-09	NH Nonghyup Capital Co., Ltd.	Next-Generation System Construction	ProSync 4 (Two-Way)
2019-09	Hanwha Insurance Co., Ltd.	Direct Insurance Company	ProSync 4 (One-Way)
2019-08	Shinhan Bank Co., Ltd.	2019 ULA Renewal (ULA 3rd Data)	ProSync 4 (One-way)
2019-08	Shinhan Bank Co., Ltd.	Shinhan Bank Kazakhstan Prosync	ProSync for Tibero

Finance Reference (2/2)

TMAXTibero

Date	Client	Project Name	note
2018-11	Life Insurance Association	Recruitment Organization Integration System Enhancement	ProSync 4 (Two-Way)
2017-06	Nonghyup Bank Co., Ltd.	NH Card Call Center Integrated Operation System	ProSync 4
2016-12	Nonghyup Bank Co., Ltd.	Separation of Mutual Finance Call Infrastructure Phase 2 (Call Infrastructure) Construction	ProSync for Tibero
2016-06	Nonghyup Bank Co., Ltd.	2016 Nonghyup Bank IT Transition Software Implementation	ProSync 2.0 Source Server
2016-04	Nonghyup Bank Co., Ltd.	System Operation and Construction for Enhancing Efficiency in Customer Service Center Operations	ProSync for Tibero

Date	Client	Project Name	note
2024-08	Hyundai Glovis Co., Ltd.	Hyundai Glovis GEA Integrated CC Operation System Construction (USD)_Other Software	ProSync 4 (Two-Way)
2024-06	Hyundai Glovis Mexico Branch	Hyundai Glovis Mexico Branch (GMX) Sequence System Software Export	ProSync 4 (Two-Way)
2024-06	KT Co., Ltd.	ICIS Tr. Main Construction Phase 3_PRD Server Prosync Construction	ProSync 4 (One-Way)
2023-07	Hyundai Glovis Co., Ltd.	Hyundai Glovis Turkey Branch Prosync 4 Implementation	ProSync 4 (Two-Way)
2023-07	Hyundai Glovis Co., Ltd.	Hyundai Glovis Indonesia introduces ProSync 4	ProSync 4 (Two-Way)
2023-05	KT Co., Ltd.	ICIS Transformation CDC Construction (ProSync)	ProSync 4 (One-Way)
2022-12	Hyundai Glovis Co., Ltd.	Hyundai Glovis 2022 Domestic Web Sequence Infrastructure Improvement Project	ProSync 4 (two-way)
2022-11	POSCO Co., Ltd.	POSPIA Mini 3.0 DBMS Expansion and Construction	ProSync 4 (One-Way)
2021-11	Dukyeong DK Co., Ltd.	Purchase of DooKyung DK ProSync4	ProSync 4 (Two-Way)
2021-11	CLAES Co., Ltd.	CLAS Purchase of ProSync4	ProSync 4 (Two-Way)
2021-11	Saeron Co., Ltd.	Purchase of Saeron ProSync4	ProSync 4 (Two-Way)

Date	Client	Project Name	note
2020-12	Multi Campus Co., Ltd.	Dream Class Design renewal and Feature Enhancement	ProSync 4 (One-way)
2020-12	Nonghyup Information Systems	NH Nonghyup ELA (Tibero Settlement)	ProSync 4 (Two-way)
2020-08	S1 Co., Ltd.	SDS All Business Sites V3 Next-Generation Employee ID Card	ProSync 4 (One-Way)
2020-06	Entels Co., Ltd.	Indonesia Smartfren MCS RS Project	ProSync 4 (Two-Way)
2020-05	S1 Co., Ltd.	Seocho Office V3 Next-Generation Employee ID Card	ProSync 4 (One-Way)
2018-12	Kia Motors Corporation	KMI MES System Construction	ProSync 4 (two-way)
2018-04	S1 Co., Ltd.	Samsung Heavy Industries V3 System (PaaS License)	ProSync 4 (One-way)
2018-04	S1 Co., Ltd.	SDS V3 Next-Generation Employee ID Card Cloud (PaaS License)	ProSync 4 (One-way)
2018-01	POSCO Co., Ltd.	POSPIA 3 Mini (Tibero ProSync Implementation)	ProSync 4 (One-way)
2017-06	POSCO Co., Ltd.	POSPIA 2 mini Analysis System Tibero	ProSync 4
2016-09	KT Corporation	Emergency Payment System	ProSync for Tibero

Major Implementation Examples 1

Incheon International Airport Corporation operates the Terminal 2 Flight Information Display System with Tibero 7 TAC and ProSync 4, achieving exceptional stability and high availability

Implementation Overview

- Project Period: 2021–2025
- Applied Solutions: Tibero 7 TAC, ProSync4

Scope of Work and System Requirements

- Purchase Quantity: Total 64 Cores (TAC, 2 Sets (16c, 16c), (16c, 16c))
- Center-to-center replication configuration and DR configuration (monthly center switching (A↔S))
- Critical airport systems serving the general public
- Phase 3 Tibero5, ProSync3 → Phase 4 Tibero7 TAC, ProSync4 Deployed with the same architecture

Introduction Effects

- In Phase 3, the adoption of TmaxTibero DBMS and CDC (ProSync) proved outstanding performance and reliability, earning customer trust and driving the continued use of Tibero solutions in Phase 4
- Achieved high stability and high availability through the adoption of TAC technology

Phase 4 FIDS (Flight Information Display System) Architecture Diagram
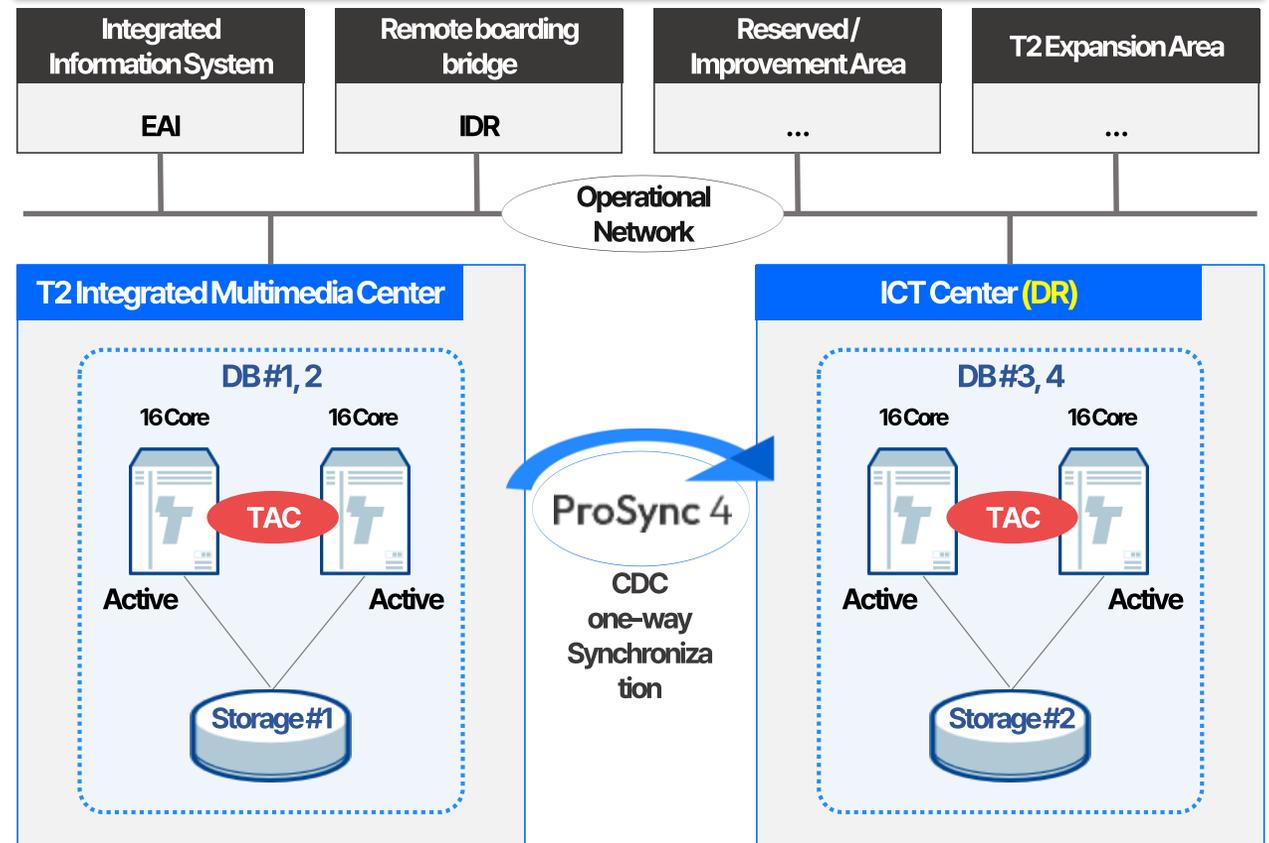
Major Implementation Case 2

TMAXTibero

Transitioned from the foreign DBMS (Oracle) to the Korean DBMS Tibero, achieving complete localization of DBMS technology within the national defense sector

Implementation Overview

- Project Period: Jan 2013 ~ Jul 2014
- Minor performance improvement Project period: Dec 2020 to Jun 2022
- H/W configuration: CPU (16Core*6) / MEM (120G*6)
- Advanced Solution Applied: Tibero 6 EE, TAC, ProSync 4 (+FileSync)
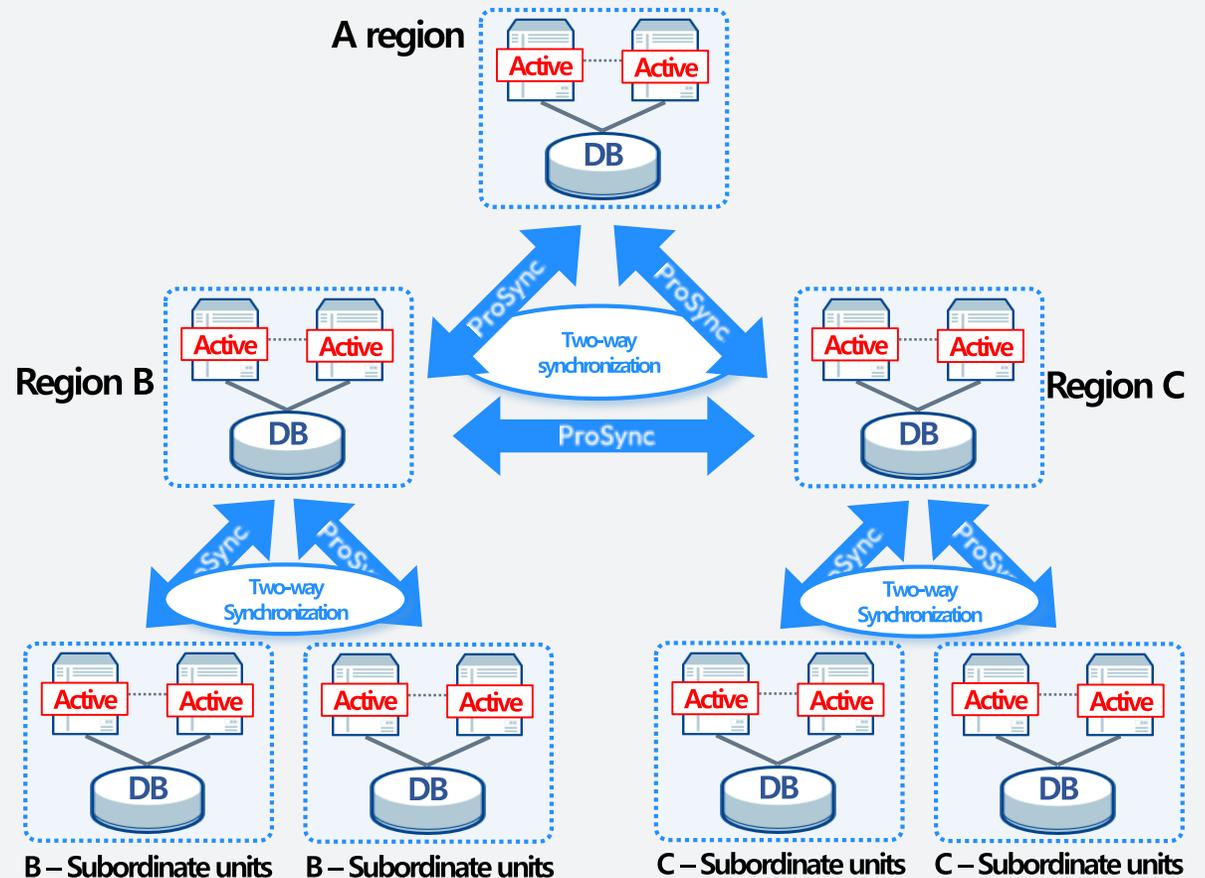 * Existing solution (e-Tomato) → ProSync 4 (with FileSync functionality added)

Scope of Work and System Requirements

- Command system 3 regions, two-way active-active synchronization configuration
- Automatic correction between centers when synchronization data conflicts occur
- Compression and encryption between channels to ensure security
- Automatic synchronization of dynamic DDL changes

Introduction Effects

- 3-way fault recovery and real-time synchronization
- System localization to prevent leakage of defense and security data

KJCCS (Korea Joint Command and Control System) Architecture Diagram

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Thank You

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