Featured Clients

X-LOG solution is a CDC solution developed with pure domestic technology with more than 300 copies of construction experience in various sites such as manufacturing, public, telecommunications, and defense.
Proven solution recognized by customers for excellent performance and active technical support

enterprise

- HYUNDAI MOTOR GROUP
- HYUNDAI STEEL
- SAMSUNG SAMSUNG ENGINEERING
- POSCO CHEMICAL
- SAMSUNG
- U BASE
- LG U+
- GS Caltex
- SK hynix
- kt
- CORNING
- SAMSUNG
- SK planet
- LOTTE Members

finance

- KFTC Korea Financial Telecommunications & Clearings Institute
- KID KOREA INSURANCE DEVELOPMENT INSTITUTE
- DGB Life DGB
- National Credit Union Federation of Korea
- Samsung Financial Networks
- OSB 저축은행 OSB SAVINGS BANK.
- KB Kookmin Bank
- NH INVESTMENT & SECURITIES
- KB Savings Bank
- IBK Industrial Bank of Korea
- KOREA FEDERATION OF SAVINGS BANKS
- Hana Life
- NH Bank
- KB 증권 valbury PT. Valbury Sekuritas Indonesia

public

- Korea Disease Control and Prevention Agency
- MOLIT Ministry of Land, Infrastructure and Transport
- Ministry of the Interior and Safety National Information Resources Service
- The armed forces Medical Command
- HF KOREA HOUSING-FINANCE CORPORATION
- Ministry of Health and Welfare
- KISA KOREA INTERNET & SECURITY AGENCY
- ex Korea Expressway Corporation
- KISTI www.kisti.re.kr Korea Institute of Science and Technology Information
- SUPREME COURT OF KOREA
- KORAD KOREA RADIOACTIVE WASTE AGENCY
- KEPCO
- Ministry of the Interior and Safety
- KOMSCO 한국조폐공사 Korea Minting, Security Printing & ID Card Operating Corp.
- Seoul Facilities Corporation
- NHIS National Health Insurance Service
- KIC Korea Investment Corporation
- 서울특별시 서울의료원 Seoul Medical Center

Public 22-23 Major Delivery Cases

Clients	Project Name	Product	Contract Date	Remark
Korea Environment Corporation	Establishment of DR Center for Zero-Emission Vehicles	X-LOG for CDC X-LOG for IDL	2023-10-13	
Korea Expressway Corporation	National Highway Traffic Information Integrated System DR Center Establishment	X-LOG for CDC	2023-09-06	
Korea Financial Information Service	Establishment of Subsidy Integrated Citizen Portal	X-LOG for CDC	2023-08-15	
Ministry of National Defense	2023 000 System Performance Improvement Project	X-LOG for CDC	2023-07-26	
Korea Mint Corporation	Establishment of KOMSCO Trust Platform	X-LOG for CDC	2023-07-23	
Supreme court	Next-generation e-litigation system construction project	X-LOG for CDC X-LOG for IDL	2023-07-12	
Korea Information Society Development Institute (NIA)	Government-wide EA Portal Construction Project	X-LOG for CDC	2023-06-02	
Auditor	Public Audit Information System Reconstruction Project	X-LOG for CDC	2023-05-23	
Public Employees Pension Service	22 years XGATE HPonet	X-LOG for CDC	2022-12-29	
Ministry of Land, Infrastructure and Transport	Establishment of Machinery & Equipment Industry Information System	X-LOG for CDC	2022-12-29	
Ministry of Land, Infrastructure and Transport	RMA case outside of Songshan Bongdam Expressway	X-LOG for CDC	2022-12-27	

Public 22-23 Major Delivery Cases

Clients	Project Name	Products	Contract Date	Remarks
Insurance Development Institute	Delivery of Insurance Development Institute X-LOG for CDC V6	X-LOG for CDC	2022-12-21	
Korea Land Trust	Korea Land Trust Vendor Maintenance Contract	X-LOG for CDC	2022-12-06	
Ministry of Land, Infrastructure and Transport	Ministry of Land, Infrastructure, and Transport X-LOG Subscription Contract	X-LOG for CDC	2022-11-09	
National Institute of Environmental Sciences	Technical support order for the National Institute of Environmental Sciences	X-LOG for CDC	2022-10-20	
Startup Promotion Agency	Purchase Order for Technical Support of X-LOG Tibero DBMS from the Korea Startup Promotion Agency	X-LOG for CDC	2022-10-20	
Korea Technology Information researcher	National Science and Technology Knowledge Information Service(NTIS)	X-LOG for CDC	2022-10-05	
KFTC	Financial Settlement Institute (BIO and OTP Migration Project)	X-LOG for CDC	2022-08-16	
KEPCO	KEPCO ADMS construction project X-LOG license supply order	X-LOG for CDC	2022-07-15	
KEPCO KDN	ADMS company-wide expansion 1st year infrastructure construction	X-LOG for CDC	2022-05-03	
National Health Insurance Corporation	National Health Insurance Service Integrated Maintenance Service Project	X-LOG for CDC	2022-01-31	
Korea Housing Finance Corporation	Computer System Contract	X-LOG for CDC	2022-01-12	

Public 22-23 Major Delivery Cases

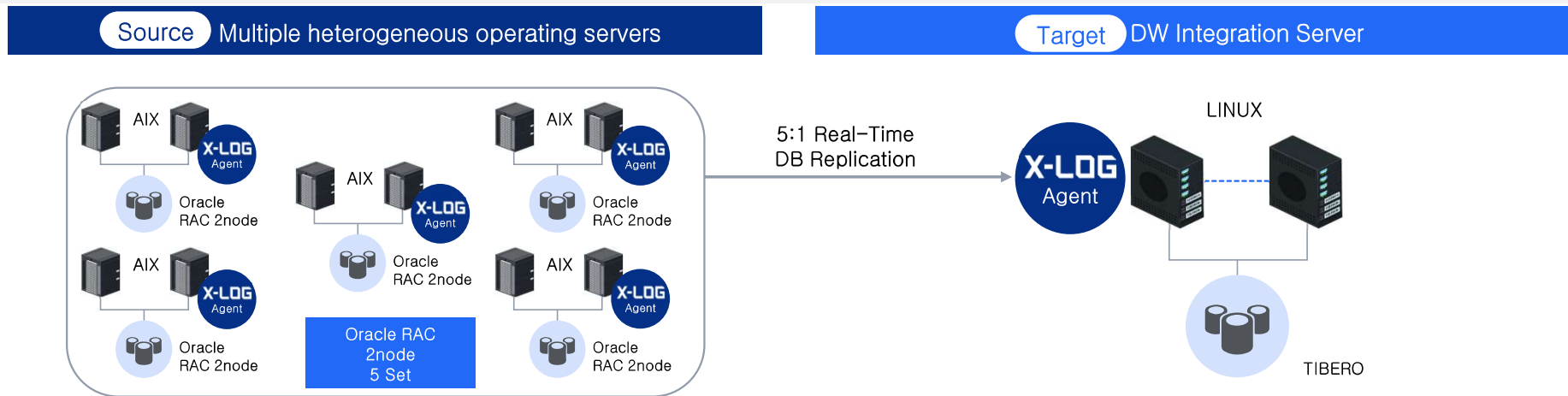| Client	Project Name	Product	Contract Date	Remark
HMC	X-LOG HMC Digital Key	X-LOG for CDC	2022-12-26	
HMC	X-LOG HMC Ulsan Plant 2 Quality Completion	X-LOG for CDC	2022-11-16	
Hyundai Steel	X-LOG Introduction of CDC for Hyundai Steel's company-wide analysis system (Qlik)	X-LOG for CDC	2022-11-11	
POSCO CHEMICAL	POSCO Chemical's Management Information DB Replication System Infrastructure Maintenance	X-LOG for CDC	2022-10-06	
Hyundai Motor Group	Supplied X-LOG license for HTWO Guangzhou hydrogen fuel cell plant	X-LOG for CDC	2022-10-01	
Hyundai Motor Company	Hyundai Digital Key 2.0 HMGC X-LOG license supply order in China	X-LOG for CDC	2022-10-01	
Hyundai Motor Company	Hyundai Digital Key 2.0 Genesis X-LOG license supply order in China	X-LOG for CDC	2022-10-01	
Kia Motors	Kia Gwangmyeong 1 Factory Quality Completion System X-LOG License Supply Order	X-LOG for CDC	2022-09-01	
Samsung.com	X-LOG FOR ON-PREM CONVERSION ON SAMSUNG.COM	X-LOG for CDC	2022-02-28	

Examples of clients in the financial sector

Clients	Project Name	Products	Contract Date
BNK Saving Bank	Establishment of information system	CDC	2023.
Samsung Securities	Purchase of Customer Authentication Ledger Data Synchronization Solution (X-LOG for CDC)	CDC	2023.
KFTC	BIO and OTP Migration Project	CDC	2019.10.24
Insurance Development Institute	DR deployment. Data collection for statistical work	CDC	2015.08.01
Samsung Life Insurance	Maintenance Agreements	CDC	2018.05.01
OSB Saving Bank	Maintenance of Analysis Dedicated System Software	CDC	2015.03.01
SB Savings Bank Association		CDC	
Hana Life Insurance	MyData Establishment	CDC	2022.01.01
DGB Life Insurance		CDC	
National Credit Union Federation	Obsolete Equipment Replacement Project	CDC/IDL	2019.10.24
KB Kookmin Bank	KB Kookmin Bank Training System	CDC	2022.03.21
KB Saving Bank	Establishment of next-generation system	CDC	2021.10.04
KB Securities Valbury	DR Construction Project	CDC	2022.07.15
Korea Housing Finance Corporation	Computer System Contract	CDC	2022.03.01
Technology Guarantee Fund	Smart Tech Bridge Computer Environment Advancement	CDC	2022

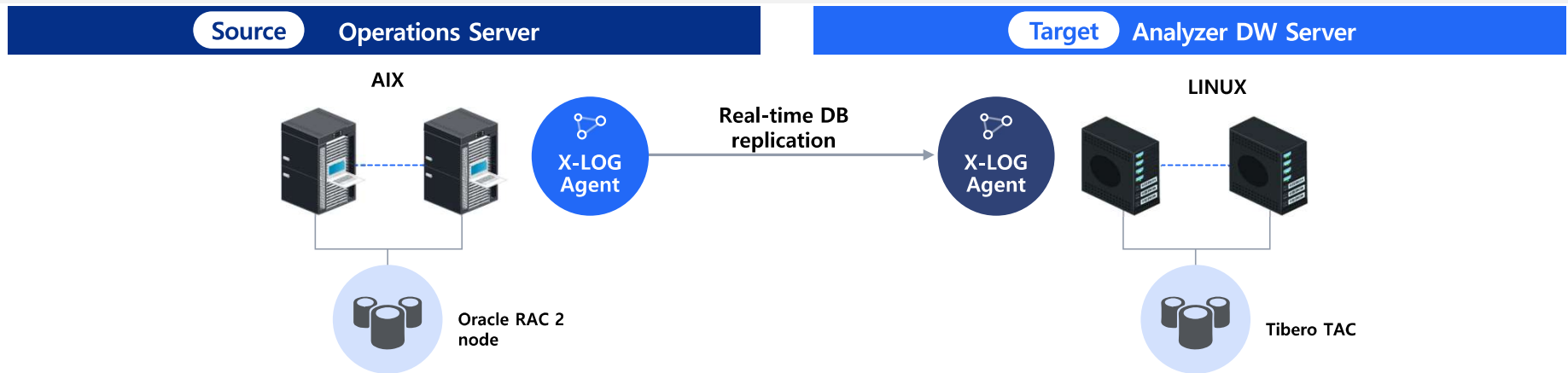# Real-time data integration practices

HYUNDAI STEEL

Client	Hyundai Steel
Purpose of introduction	Establishing data integration in distributed tasks or DBMS systems, Integration of real-time data between operations and DW
System Configurations	• Configure real-time replication between heterogeneous OS and heterogeneous DBMS • Configuring N:1 Real-Time DW Data Replication

Source Multiple heterogeneous operating servers

Target DW Integration Server

AIX — X-LOG Agent — Oracle RAC 2node

AIX — X-LOG Agent — Oracle RAC 2node

AIX — X-LOG Agent — Oracle RAC 2node

AIX — X-LOG Agent — Oracle RAC 2node

AIX — X-LOG Agent — Oracle RAC 2node

Oracle RAC 2node 5 Set

5:1 Real-Time DB Replication

X-LOG Agent

LINUX

TIBERO

Real-time data integration practices

KB 저축은행

Client	KB Savings Bank
Purpose of introduction	Reduce licensing and maintenance costs through expensive de-oracle conversions Data management between various heterogeneous DBs within the same company
System Configurations	• Configuring Heterogeneous DBMS Real-Time Synchronization Replication between Source and Target • BUILDING ANALYTICAL DW FROM ORACLE DB TO DOMESTIC TIBERO DB

Source Operations Server

Target Analyzer DW Server

AIX

LINUX

X-LOG Agent

Real-time DB replication

X-LOG Agent

Oracle RAC 2 node

Tibero TAC

X-LOG

Examples of distributing work
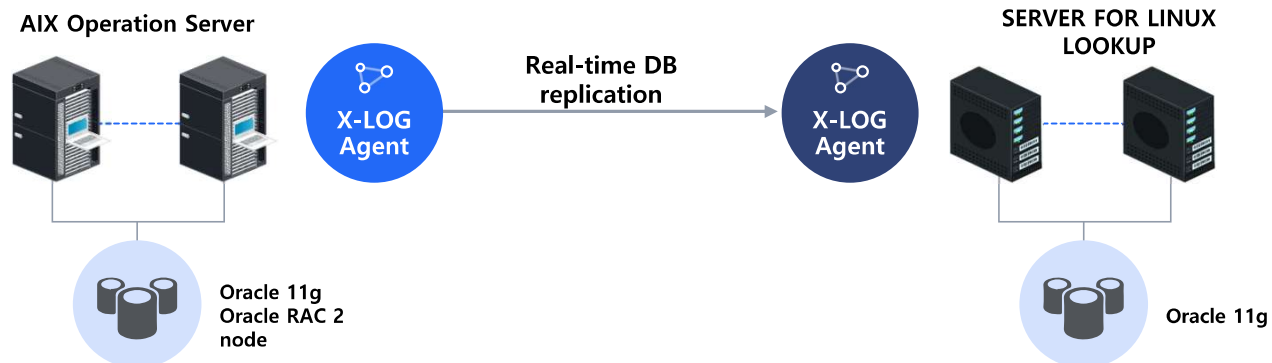
삼성생명 **SAMSUNG**

Client	Samsung Life Insurance
Purpose of introduction	Separate multiple DBMS used within the same DB server into business units, Separate dedicated tasks such as inquiry, analysis, and statistics from high-spec main operation servers to reduce costs and improve performance
System Configurations	• LOAD BALANCING BY SEPARATING PART OF THE DATA OPERATED BY THE AIX SYSTEM TO THE LINUX SERVER • In the event of a failure of the operation server, the DR system is established at the same time as the establishment of a business distribution system so that the inquiry system can be immediately converted into operation.

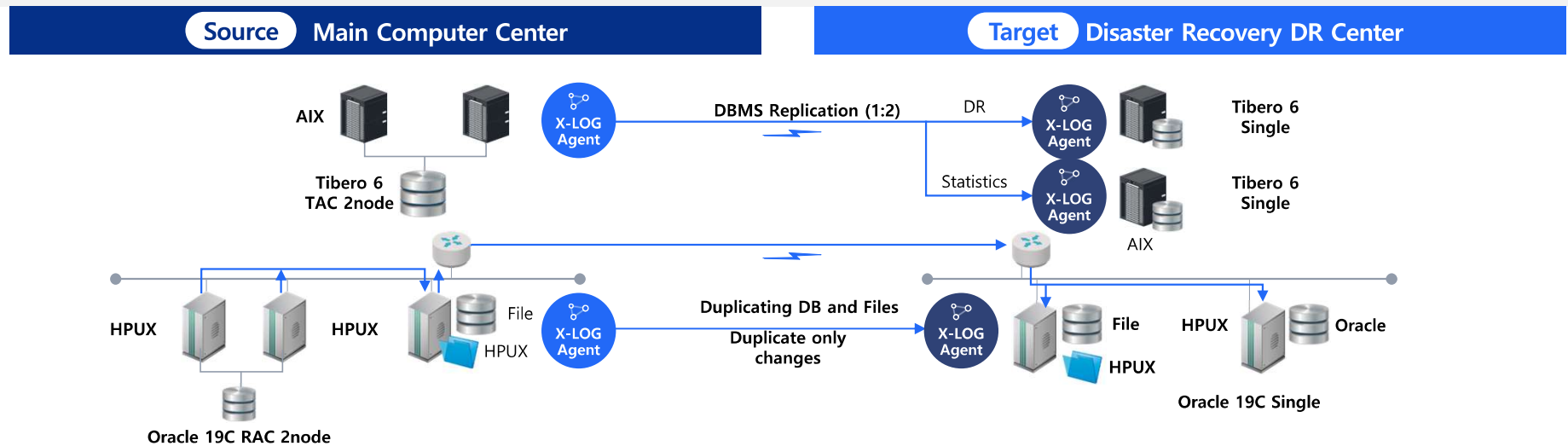**Source** **Insurance Renewal Duties**

Target **Call Center Lookup**

AIX Operation Server

SERVER FOR LINUX LOOKUP

X-LOG Agent

Real-time DB replication

X-LOG Agent

Oracle 11g
Oracle RAC 2 node

Oracle 11g

Real-time DR Implementation Examples

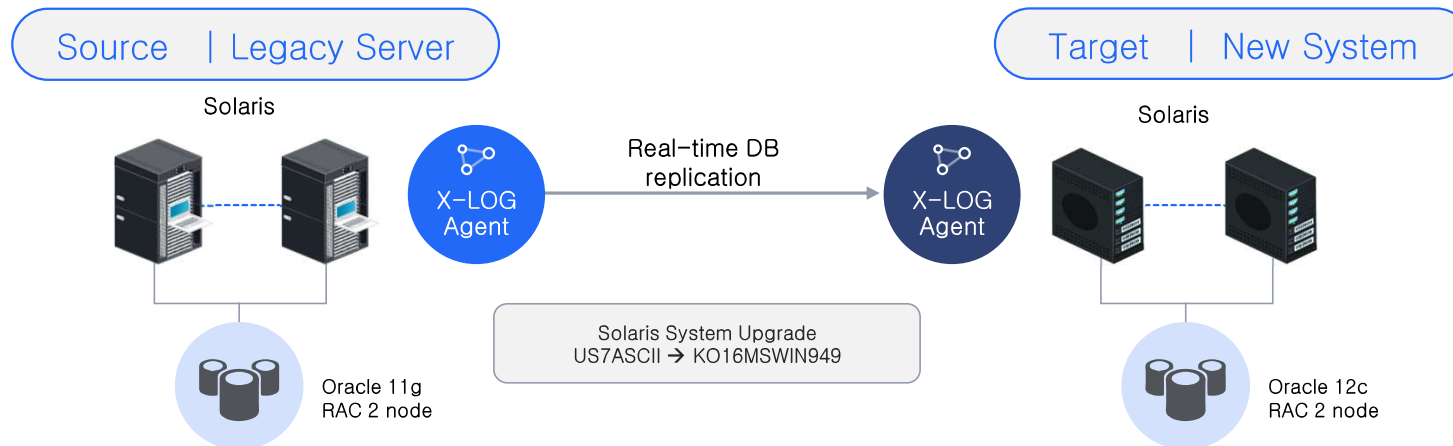|	
Client	Korea Insurance Development Institute
Purpose of introduction	Real-time DR (Disaster Recovery System) construction for real-time synchronization of DB and files Reproduction management of insurance customer information, automobile insurance business information, automobile insurance and other insurance services, etc.
System Configurations	• Batch ETL tasks are transferred to DR analyzer servers to load balance statistical systems • Applied to remote DR system construction and statistical work (1:2 synchronization configuration) to operate SW-type real-time replication solution

Source Main Computer Center

Target Disaster Recovery DR Center

AIX

X-LOG Agent

DBMS Replication (1:2)   DR

X-LOG Agent   Tibero 6 Single

Tibero 6 TAC 2node

Statistics

X-LOG Agent   Tibero 6 Single

AIX

HPUX   HPUX

File

HPUX

X-LOG Agent

Duplicating DB and Files

Duplicate only changes

X-LOG Agent

File   HPUX   Oracle

HPUX

Oracle 19C Single

Oracle 19C RAC 2node

Non-disruptive migration practices

금융결제원

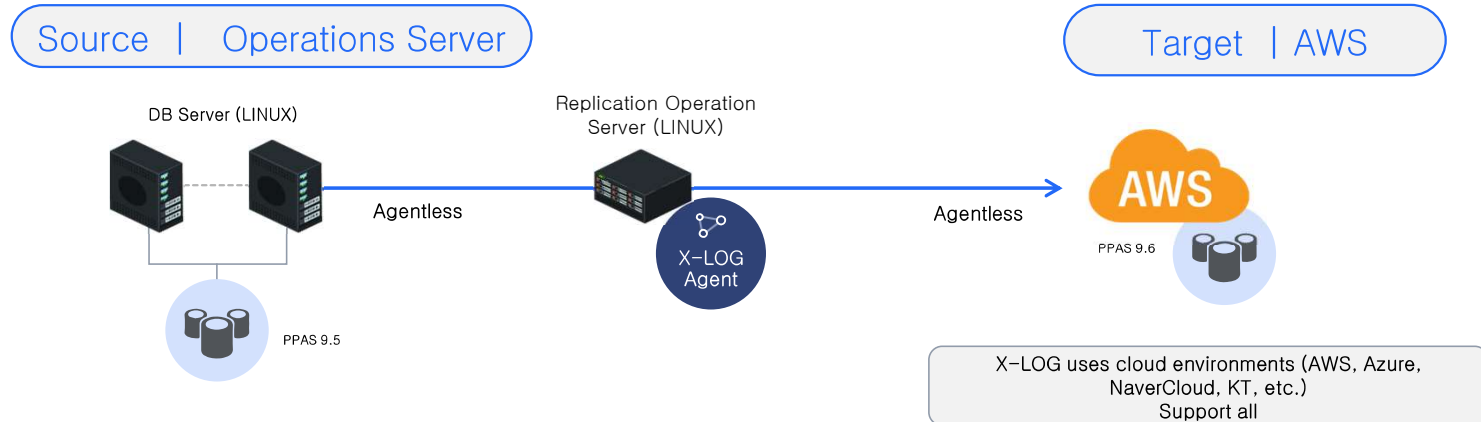| Client	KFTC
Purpose of introduction	Zero Downtime Zero Downtime Migration of VAN Card Payment System that cannot be interrupted by linking operations with member card companies, Minimize service downtime when replacing aging servers or upgrading OS/DB versions
System Configurations	• Normal real-time data replication using column mapping and transformation replication when Oracle DB versions or character sets are different • Verify fast and accurate data consistency in minimized service changeover time

Source | Legacy Server

Target | New System

Solaris

Solaris

X-LOG Agent

Real-time DB replication

X-LOG Agent

Oracle 11g
RAC 2 node

Solaris System Upgrade
US7ASCII ➔ KO16MSWIN949

Oracle 12c
RAC 2 node

Cloud Systems (Agentless) Previous Stories

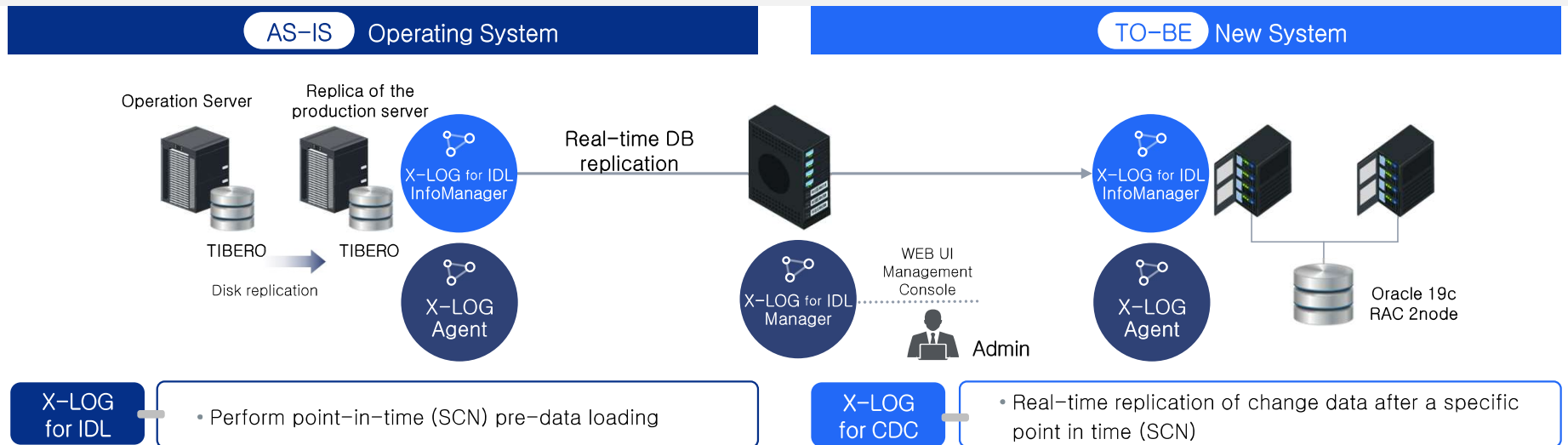| Client	Samsung Electronics
Purpose of introduction	Global business linkage with bi-directional PPAS replication Establish and operate real-time bi-directional replication systems between different versions (PPAS 9.5 <-> PPAS 9.6)
System Configurations	• Device firmware management through bi-directional replication between ICT Center PPAS DB and AWS PPAS DB • Agentless replication system operation by installing X-LOG Agents on a separate replication operation server

Source | Operations Server

Target | AWS

DB Server (LINUX)

Replication Operation Server (LINUX)

Agentless

Agentless

X-LOG Agent

PPAS 9.6

PPAS 9.5

X-LOG uses cloud environments (AWS, Azure, NaverCloud, KT, etc.)
Support all

Initial Data Transfer Cases

Client	Samsung.com
Purpose of introduction	Loading the operating system data into a new system and building non-stop migration between heterogeneous DBs Setting the transfer policy (target table, schedule, condition setting, etc.) through the integrated GUI minimizes errors that can occur in the manual work of engineers
System Configurations	Since the data is extracted from the production server replica, there is no load on the production server when the data is loaded initially. PERFORM DATA INITIALIZATION BETWEEN HETEROGENEOUS DBMS FROM TIBERO TO ORACLE

AS-IS Operating System

TO-BE New System

Operation Server

Replica of the production server

X-LOG for IDL InfoManager

Real-time DB replication

X-LOG for IDL InfoManager

TIBERO → TIBERO

Disk replication

X-LOG Agent

WEB UI Management Console

X-LOG for IDL Manager

Admin

X-LOG Agent

Oracle 19c RAC 2node

X-LOG for IDL
• Perform point-in-time (SCN) pre-data loading

X-LOG for CDC
• Real-time replication of change data after a specific point in time (SCN)

Compression method two-way DB synchronization case
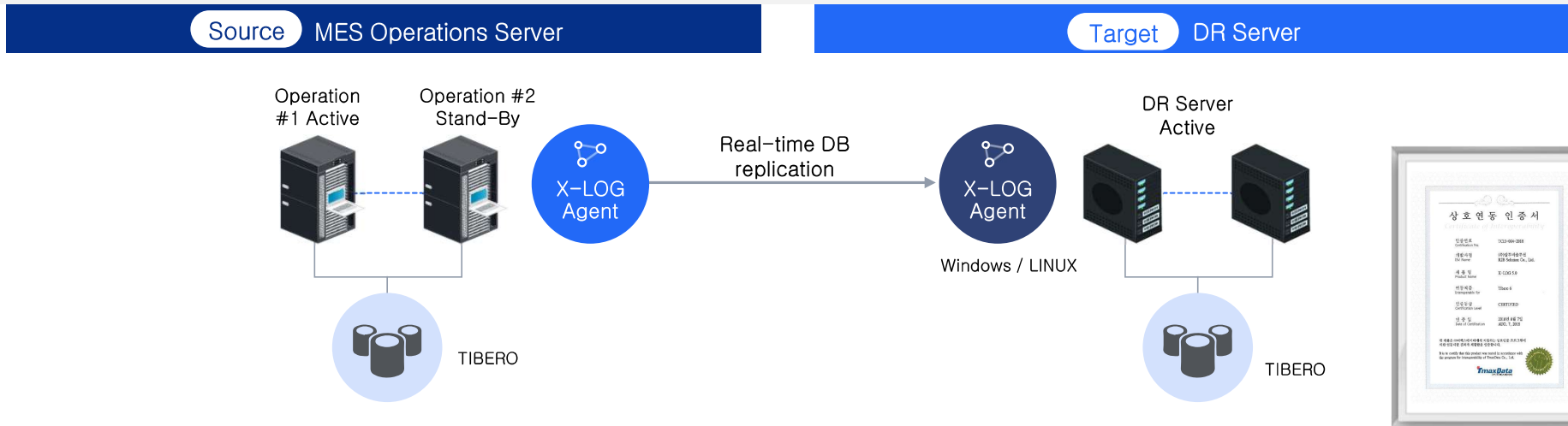
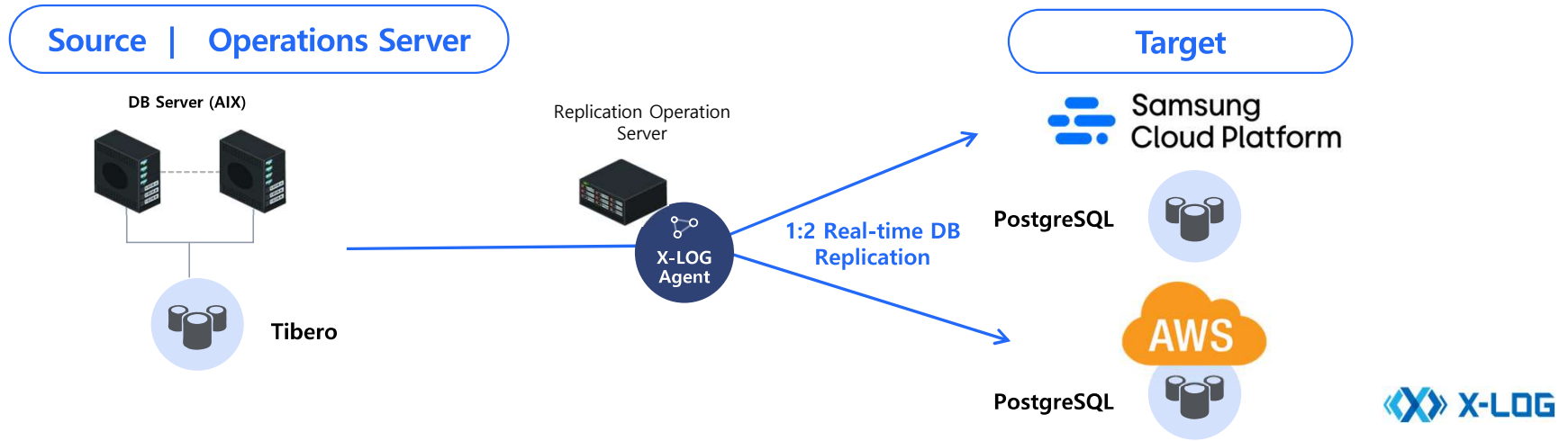|	
Client	Samsung Engineering, Samsung Electronics, UBI, Hyundai Motors, KEPCO, etc.
Purpose of introduction	Real-time connection of about 50 overseas DBs to the DB server of the Korean headquarters with N:M Two-way DB and file synchronization business linkage at low network bandwidth (20~30Mbps) at overseas business sites
System Configurations	•Improved speed by controlling the amount of data transfer through SW compression method (70~80%) •Improved real-time operation of the existing 3 days ago data to enable immediate decision-making

Standard Product Selection Examples

HYUNDAI MOTOR GROUP

Client	Hyundai Motor Group, Hyundai/Kia Motors Overseas Plant, KEPCO, etc.
Purpose of introduction	• Establishment of real-time data integration between MES operating system DR and DW • Selected as a CDC solution to support Hyundai Motor Group's de-oracle policy
System Configurations	• Tibero to Tibero real-time replication for non-stop operation of MES production lines • As a result of the implementation of BMT for CDC real-time replication, it was selected as the group's standard product with superior performance compared to the competitor (Tmax ProSync)

Source MES Operations Server

Target DR Server

Operation #1 Active

Operation #2 Stand-By

X-LOG Agent

Real-time DB replication

X-LOG Agent

Windows / LINUX

DR Server Active

TIBERO

TIBERO

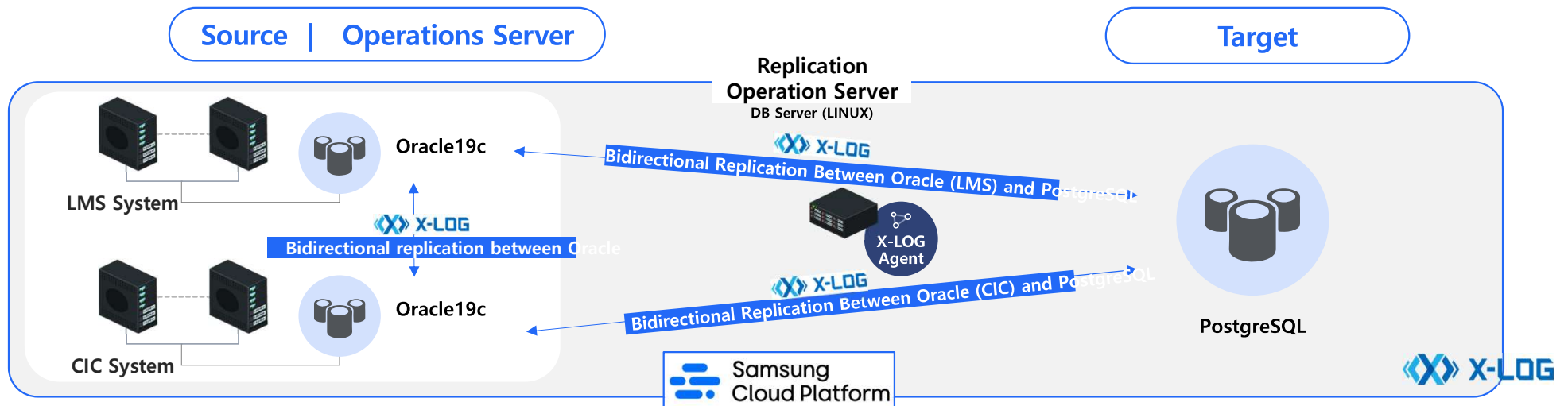# Cloud System Migration Cases (AWS/SCP)

Client	Samsung C&T
Purpose of introduction	· Establishment of a cloud-based integrated management system for new development to modernize MSA
System Configurations	1:2 real-time replication of the existing monolidic operation server to the target DB to build MSA for each cloud

Source | Operations Server

Target

DB Server (AIX)

Replication Operation Server

Tibero

X-LOG Agent

1:2 Real-time DB Replication

Samsung Cloud Platform

PostgreSQL

AWS

PostgreSQL

X-LOG

Cloud System Migration Cases (SCPs)
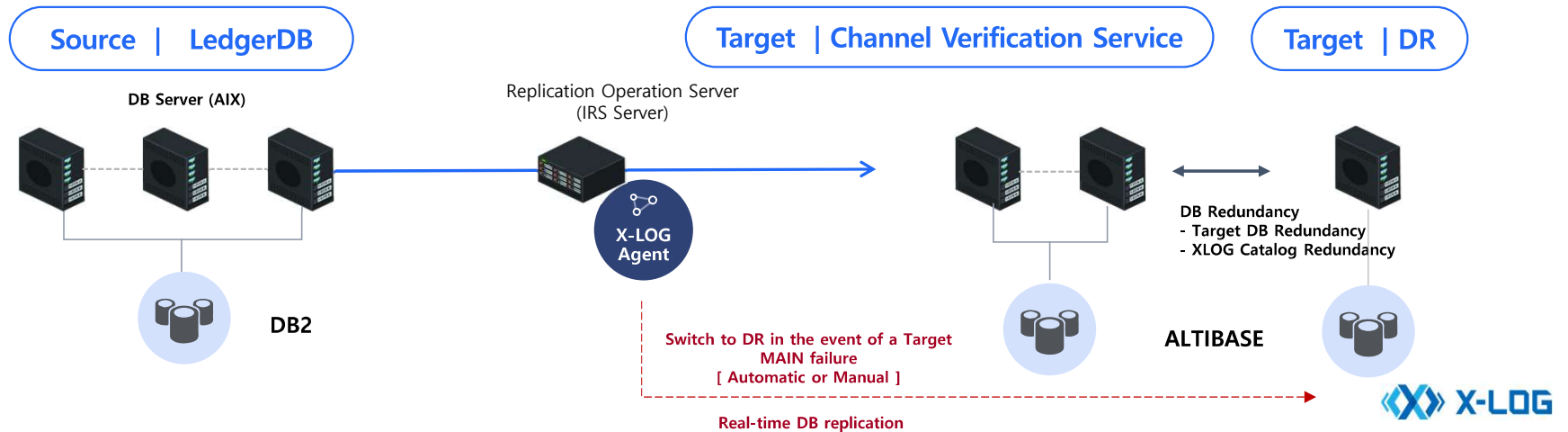
multicampus

| Client	Samsung Multicampus
Purpose of introduction	• To reduce licensing and maintenance costs through expensive de-oracle conversion, the analyzer system in the cloud environment is built with PostgreSQL • Data management between various heterogeneous DBs within the same company
System Configurations	• Three-fold duplication between online lecture system (LMS system) and CIC system and reference information system

Source | Operations Server

Target

Replication Operation Server
DB Server (LINUX)

LMS System

Oracle19c

X-LOG

Bidirectional replication between Oracle

CIC System

Oracle19c

X-LOG

X-LOG Agent

Bidirectional Replication Between Oracle (LMS) and PostgreSQL

X-LOG

Bidirectional Replication Between Oracle (CIC) and PostgreSQL

PostgreSQL

Samsung Cloud Platform

X-LOG

Real-time data integration practices

Client	Samsung Financial Networks
Purpose of introduction	• Establishment of an integrated system for synchronizing customer authentication ledger data • Improvement of frequent failures and difficulty in resolving causes caused by data mismatching and human error of the existing EAI system
System Configurations	• Through the introduction of X-LOG for CDC, the data consistency between the ledger DB and the channel authentication service is improved. • Immediate response support • Install the agent on the relay server and configure real-time replication with the channel authentication service and DR through Target DB redundancy

Source ｜ LedgerDB **Target ｜ Channel Verification Service** **Target ｜ DR**

DB Server (AIX)

Replication Operation Server
(IRS Server)

X-LOG
Agent

DB2

ALTIBASE

DB Redundancy
- Target DB Redundancy
- XLOG Catalog Redundancy

Switch to DR in the event of a Target
MAIN failure
[Automatic or Manual]

Real-time DB replication

X-LOG

- 1. Text Input > 1.1 Text Input > 1.1.1 Text Input
- 1.5 Examples of introduction in the financial sector

- In order to improve the frequent occurrence of failures and the cause of the existing EAI system, CDC products were reviewed, and the X-LOG for CDC solution was introduced to support immediate response to data changes and contribute to improving data reliability.

KEY POINT ▸ Samsung Securities Cases
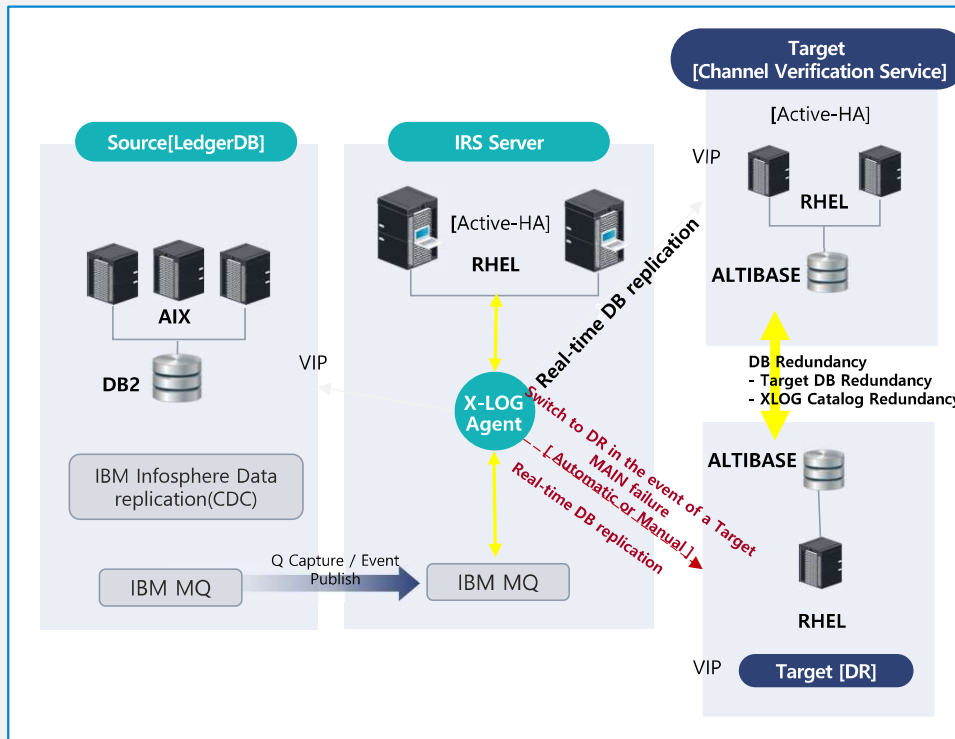
When to introduce and deploy
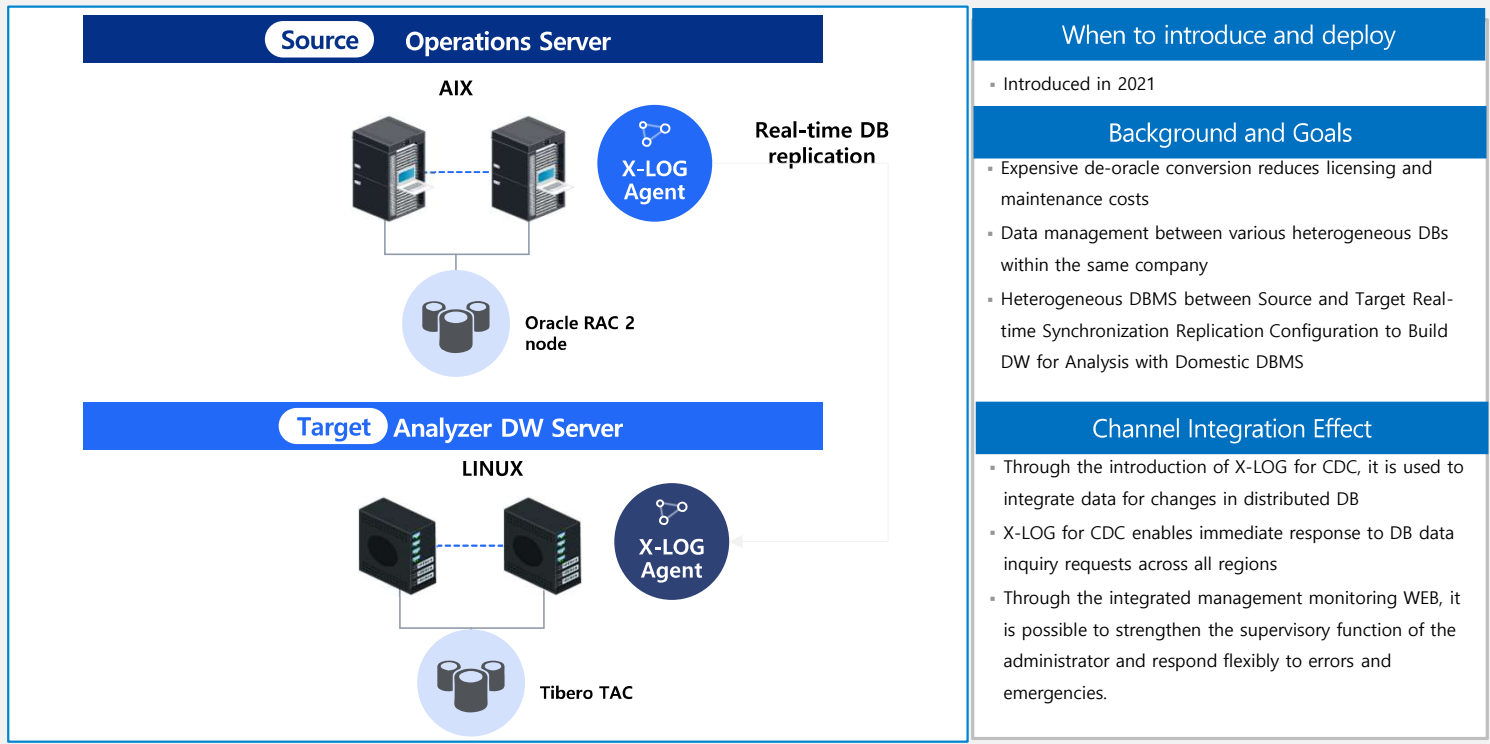- Introduced in 2023

Background and Goals
- Improvement of frequent failures and difficulty in resolving causes caused by data mismatching and human error of the existing EAI system
- Due to issues such as inability to respond to external environmental changes between heterogeneous DBMS, X-LOG for CDC solution was introduced after reviewing CDC products

Channel Integration Effect
- With the introduction of X-LOG for CDC, it is possible to support immediate response to data changes by improving data consistency between ledger DB and channel authentication service.
- X-LOG for CDC ensures minimization of data errors between heterogeneous DBMSs to improve data reliability

- 1. Text Input > 1.1 Text Input > 1.1.1 Text Input
- 1.5 Examples of introduction in the financial sector

- Configure real-time DW data replication through CDC linkage between heterogeneous DBMS for distributed work or data integration of DBMS systems

KEY POINT ▶ KB Savings Bank Case

Source — **Operations Server**

AIX

X-LOG Agent

Real-time DB replication

Oracle RAC 2 node

Target Analyzer DW Server

LINUX

X-LOG Agent

Tibero TAC

When to introduce and deploy
- Introduced in 2021

Background and Goals
- Expensive de-oracle conversion reduces licensing and maintenance costs
- Data management between various heterogeneous DBs within the same company
- Heterogeneous DBMS between Source and Target Real-time Synchronization Replication Configuration to Build DW for Analysis with Domestic DBMS

Channel Integration Effect
- Through the introduction of X-LOG for CDC, it is used to integrate data for changes in distributed DB
- X-LOG for CDC enables immediate response to DB data inquiry requests across all regions
- Through the integrated management monitoring WEB, it is possible to strengthen the supervisory function of the administrator and respond flexibly to errors and emergencies.

Supreme Court – Building the Next Generation of Electronic Litigation System
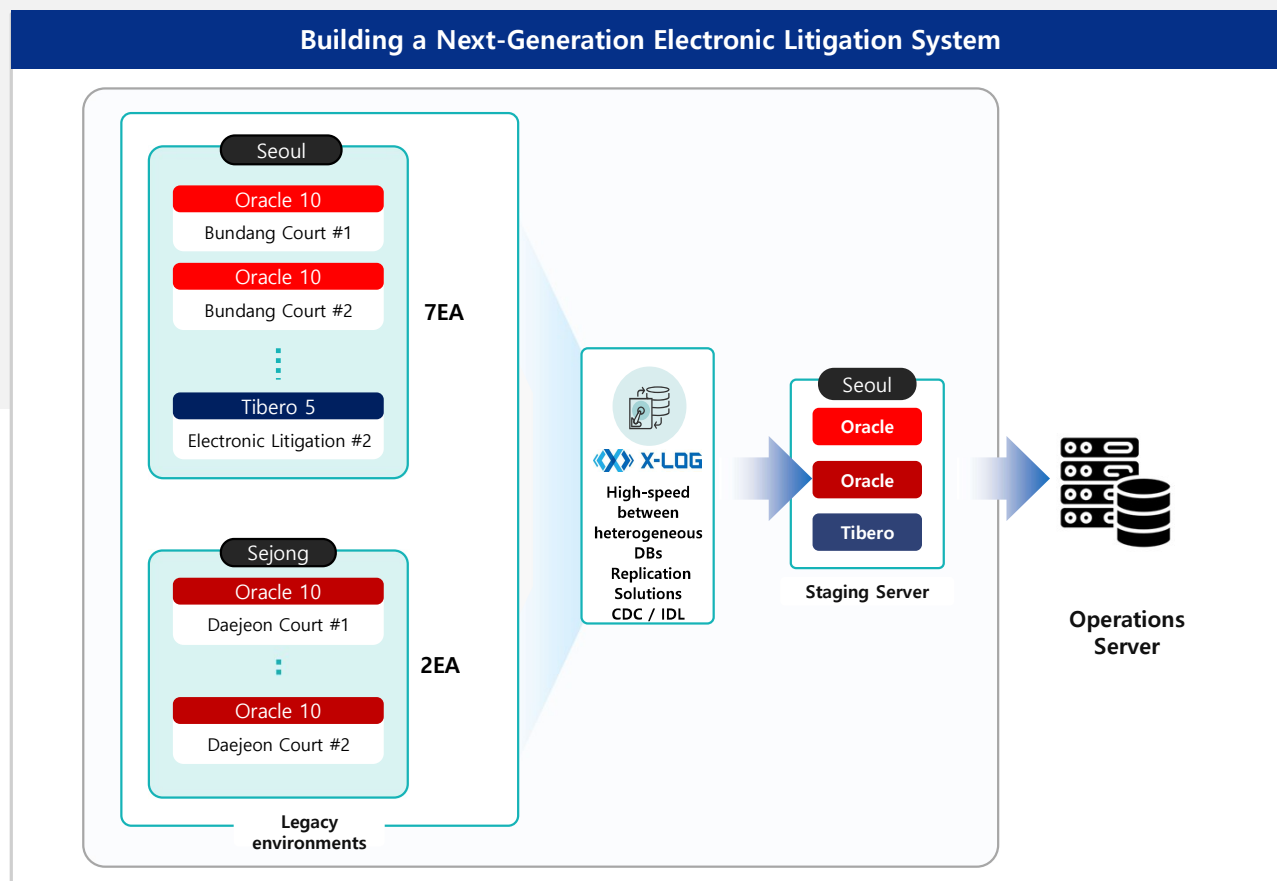
Business Purpose

- Aging system is unable to respond to changes in the external environment due to technological development, frequent failures occurrence and difficulty in resolving causes
- Due to the DB distributed by region and business, it is difficult to respond to the demand for DB data inquiry in the entire region

Introduction overview

- Project Period: 48 months
- Solution: X-LOG for CDC , X-LOG for IDL

What to Expect

- Introducing X-LOG for CDC and IDL to provide N:1 non-disruptive migration and improve DB integration structure
- X-LOG for CDC is used to integrate data of DB changes
- X-LOG for CDC enables immediate response to DB data inquiry requests across all regions

Building a Next-Generation Electronic Litigation System

Seoul

Oracle 10
Bundang Court #1

Oracle 10
Bundang Court #2

7EA

Tibero 5
Electronic Litigation #2

Sejong

Oracle 10
Daejeon Court #1

2EA

Oracle 10
Daejeon Court #2

Legacy environments

X-LOG

High-speed between heterogeneous DBs Replication Solutions CDC / IDL

Seoul

Oracle
Oracle
Tibero

Staging Server

Operations Server

Defense Intelligence Headquarters – 2023 000 System Performance Improvement Project (DR Case)

Ministry of National Defense Republic of Korea

In the event of a system failure in operation, it is configured to quickly switch to the backup system so that it can be operated normally immediately, and it is used to expand linkage with other systems in the future by expanding linkage with the center redundancy (physical) countermeasure project in preparation for emergencies, and resolving data errors.
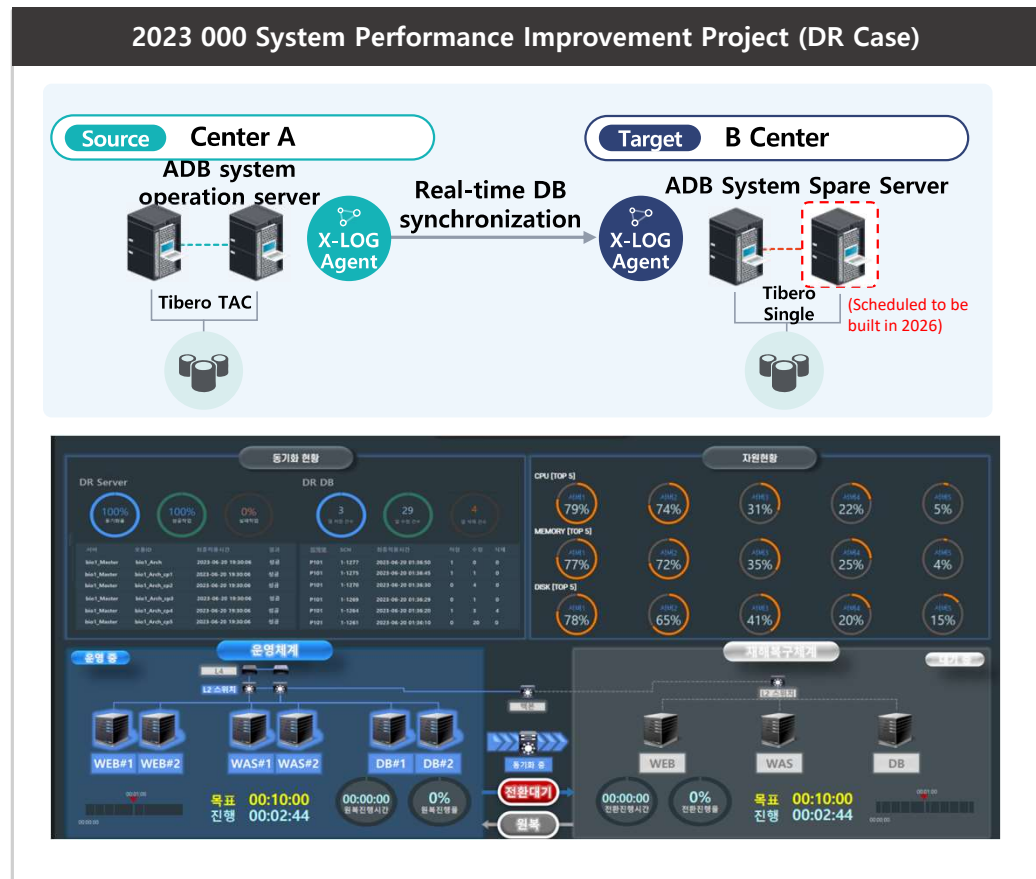
Business Purpose

- Improvement of preparedness systems for emergencies such as war and natural disasters and physical survivability requirements
- Through the center redundancy business, in the event of an operational system failure, it is quickly switched to a backup system to provide stable and flexible response services.

Introduction overview

- Project Period: 2000~ 2024
- Solution: X-LOG for CDC

What to Expect

- X-LOG for CDC strengthens administrators' monitoring of normal operations to enable resilient response to errors and emergencies.
- Leverage X-LOG for CDC to ensure minimization of data errors between center redundancy for improved data reliability

2023 000 System Performance Improvement Project (DR Case)

Ministry of Health and Welfare –
Establishment of Next-Generation Social Security Information System

보건복지부

Business Purpose

- As the scope of management of existing services has been expanded to all ministries and public institutions, it is difficult to respond quickly in the existing environment and the processing capacity has reached the limit.
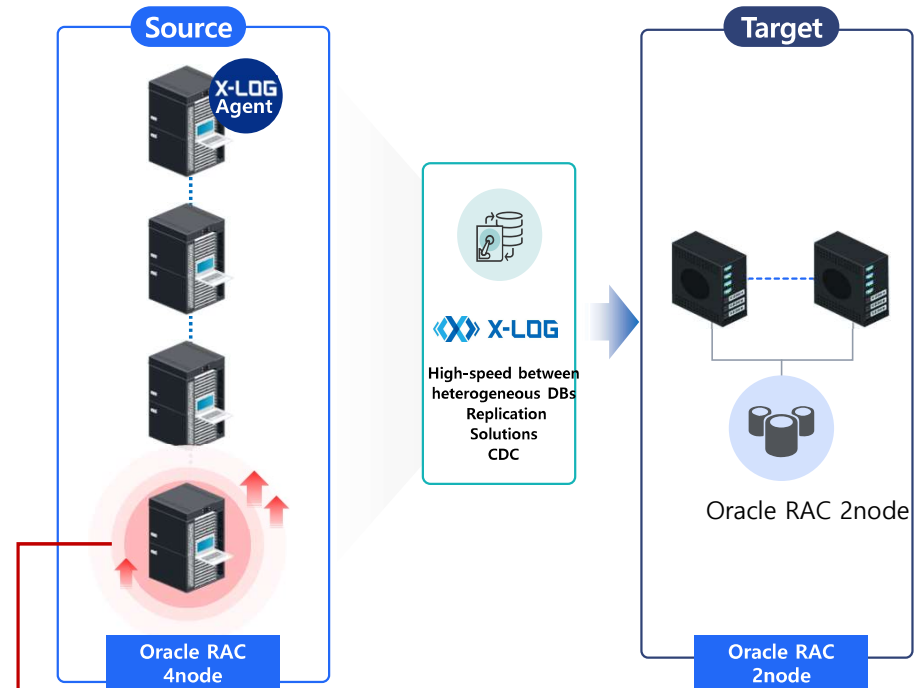- To leap forward as a system for user convenience, work efficiency improvement,

Introduction overview

- Project Period : 20200 ~ 2024.00 (960 days)
- Solution: X-LOG for CDC

What to Expect

- Transfer real-time data through X-LOG for CDC to contribute to data generation, change management, and quality management system implementation and operation
- Contribute to the establishment of a scale-out system that lays the foundation for the integration of distributed data and supports analysis and statistics through X-LOG for CDC

Establishment of next-generation social security information system

Source

X-LOG Agent

Target

X-LOG

High-speed between heterogeneous DBs Replication Solutions CDC

Oracle RAC 2node

Oracle RAC 4node

Oracle RAC 2node

Even 3TB (hundreds of millions) of archives generated per day can be transferred without performance delay!
(When events such as quarterly and year conversions occur, up to 7~8TB occurs)