



Enterprise Data Integration using dataZap: Hub-and-Spoke Architecture for Scalable, Intelligent Data Integration

Executive Summary

Enterprise data integration is critical for business agility, yet many organizations struggle with fragmented systems, manual processes, and limited visibility. As data volumes grow, traditional point-to-point integrations create silos and inefficiencies.

ChainSys dataZap addresses this with a centralized hub-and-spoke architecture that brings control, standardization, and scalability to data integration, enabling reliable and real-time data movement across systems. AI-enabled capabilities such as intelligent mapping, automated validation, and anomaly detection enhance data quality and reduce manual effort. Built on a metadata-driven, low-code platform with prebuilt templates, dataZap accelerates implementation and simplifies integration, resulting in improved efficiency, better data accuracy, and faster decision-making.

Fact Check: Why Change Your Approach?

97%

97% of APAC enterprise IT leaders are adopting or planning to adopt AI agents within the next two years, yet integration challenges remain a key barrier to fully realizing their potential as a scalable digital workforce. ([Salesforce](#))

44%

44% of data professionals spend more than half their time managing data integration tasks, highlighting the operational burden of fragmented systems. ([Wifitalents](#))

75%

75% of organizations have had to redesign their data integration pipelines due to GDPR compliance requirements, reflecting the growing impact of regulatory pressures. ([Wifitalents](#))

Building a Scalable Data Integration Foundation

What Strong Integration Looks Like	Why Integration is Non-Negotiable
A centralized hub managing all data movement across systems	Ensures consistent and reliable data flow across systems
Standardized integration patterns instead of point-to-point connections	Eliminates fragile, hard-to-maintain point-to-point integrations
Reusable mappings, templates, and workflows	Improves the speed of integration, development and deployment
Real-time visibility into data flows, job status, and failures	Reduces operational effort and manual intervention
Built-in validation, transformation, and reconciliation	Supports scalability as systems and data volumes grow
Seamless handling of batch, real-time, and streaming integrations	Creates a strong foundation for digital transformation and automation

Introducing ChainSys Smart Data Platform: Hub-and-Spoke Architecture for Controlled Integration

ChainSys Smart Data Platform transforms integration from a fragmented set of point-to-point connections into a centralized, scalable, and well-governed execution model using a hub-and-spoke architecture. All integration logic is consolidated within a central hub (dataZap), while source and target systems operate as connected spokes, enabling data to flow through a single, controlled layer. This approach brings data flows, mappings, transformations, and validations into one place, ensuring every integration is consistently designed, executed, and monitored. The result is a streamlined and reliable data movement framework that reduces failures, improves visibility, and keeps systems continuously aligned.

ChainSys Smart Data Platform: AI-Driven Integration Enhancements



AI-Assisted Column Mapping

Manual field mapping across heterogeneous schemas is one of the most time-intensive bottlenecks in any integration project. dataZap's AI engine eliminates this by simultaneously analysing field names, data types, and semantic context to generate mapping suggestions ranked by confidence score. Analysts shift from creation to validation, reviewing and confirming rather than building from scratch, compressing implementation timelines and significantly reducing the risk of human error. In complex integration scenarios where pre-configured templates typically address up to 80% of transformation, mapping, and loading requirements, the AI resolves the remaining gaps intelligently.



AI Prompt-Based Scheduling

Workflow orchestration traditionally depends on specialized DevOps knowledge, including cron expressions, dependency setup, and time zone handling. With AI-driven prompt-based scheduling, users can simply state their requirements in natural language. The system intelligently interprets the intent, automatically configuring schedules, managing dependencies, and resolving time zone considerations with minimal manual effort.



AI Conversational Assistant

Instead of relying on extensive documentation or submitting support requests, users can interact with the platform through a conversational interface. By describing their queries or challenges in plain language, they receive contextual, actionable guidance instantly, improving productivity and reducing turnaround time.

Integration Capabilities That Actually Matter



Pre-built Connectors & Templates:

Provides seamless connectivity to 200+ enterprise systems using a rich library of 10000 reusable templates, significantly accelerating integration development and reducing dependency on custom coding.



ETL / ELT Processing Engine:

Enables flexible and scalable data movement through configurable pipelines that support both ETL and ELT approaches, allowing organizations to optimize performance based on integration needs.



AI-Enabled Data Quality:

Acts as an intelligent monitoring layer, using AI to apply pre-configured rules for profiling, cleansing, enrichment, and correction, ensuring high data accuracy and reliability, while executing validations during ingestion to proactively detect and resolve anomalies before they impact downstream systems.



Workflow Orchestration:

Manages end-to-end integration processes with support for batch, real-time, streaming, and API-driven executions, ensuring smooth coordination of workflows and dependencies.



Real-Time Monitoring & Dashboards:

Delivers complete visibility into integration operations through centralized dashboards, providing real-time tracking of job status, logs, and alerts for proactive issue management.



Reconciliation Engine:

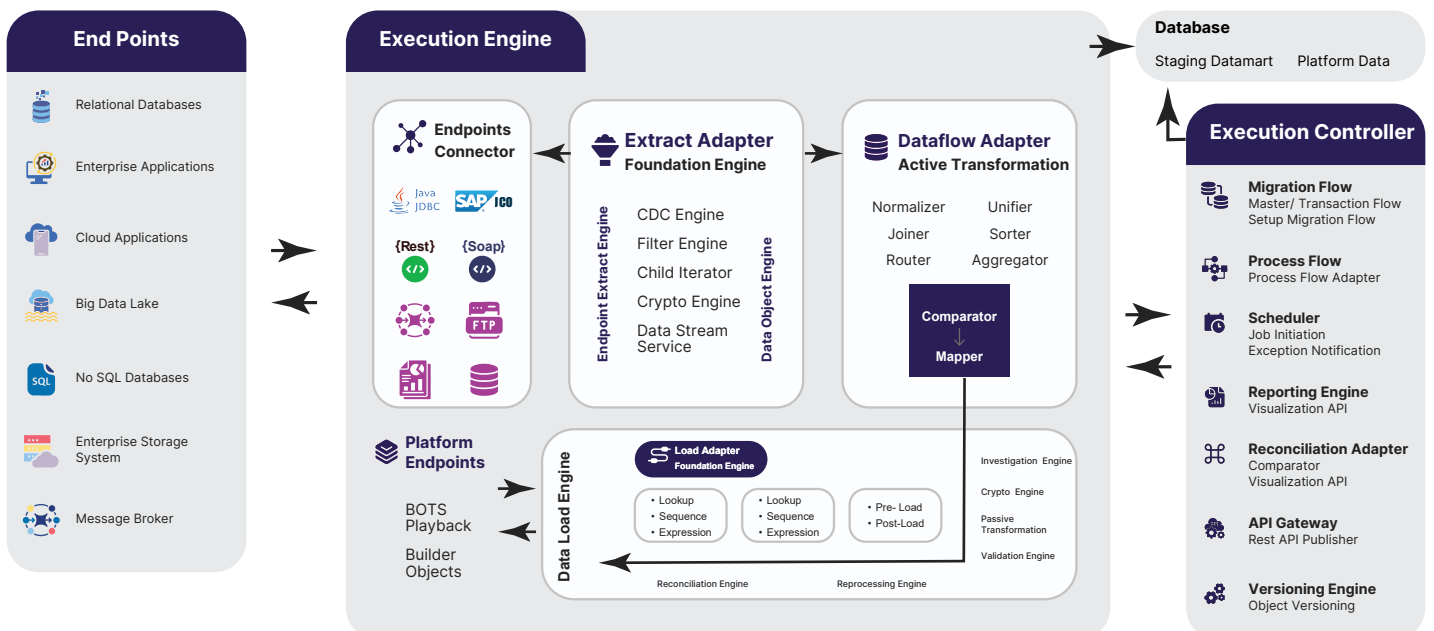
Validates data consistency by comparing source and target systems, ensuring completeness, accuracy, and reliability across all integration processes.



Predictive Analytics Engine:

Extends data capabilities from integration to insights by leveraging advanced AI and machine learning models. When combined with real-time data integration, it enables trend prediction, immediate analysis, and proactive, data-driven decision-making.

Data Integration Architecture Diagram



Step-by-Step Integration Execution Through the Hub (dataZap)

The hub serves as the central execution layer for all integration activities, managing data movement with control, consistency, and visibility across systems. Below is the step-by-step process executed within the hub:

Extraction:

Enables seamless connectivity with a wide range of source systems through pre-built connectors spanning ERP, CRM, databases, and APIs. It supports both batch and real-time data ingestion, ensuring reliable and scalable data acquisition from heterogeneous environments.

The screenshot shows the 'Oracle Connection' configuration page. On the left, a list of connections is visible, including 'BA_ORACLE', 'BA_ORACLE_2812', 'CORE_V15_DEV_BANK', and 'ORCL_CONN_BANK_NAME'. The 'BA_ORACLE' connection is selected. The main area displays the configuration for this connection, organized into two sections: 'General Information' and 'Database Information'.

General Information:

- Connection Name: BA_ORACLE
- Display Name: BA_ORACLE
- Sprint Name: [Link]
- Data Mart: [Link]
- Connect as: Source Destination
- Active: Yes No
- System Name: [Dropdown]
- Instance Name: [Dropdown]
- Description: [Text Area]

Database Information:

- Database Version: [Dropdown]
- Host: 192.168.57.180
- Port: 1521
- Enable SSL For: [Dropdown]
- Connect Data By: SID Service
- SID/Service Name: saas12
- Role: [Text Field]
- Application Name: [Text Field]
- Username: qa_dm
- Password: [Masked]
- Time Zone: [Dropdown]

Transformation:

Applies structured mappings, data standardization, enrichment, and business rules to convert raw data into a consistent, analytics-ready format. This step ensures alignment with target schemas while improving usability and contextual relevance.

The screenshot shows the 'Transformation' step execution interface. On the left, a progress bar indicates the current step is 'Transformation'. The main area displays a table of datasets and a table of transformation steps.

Dataset List:

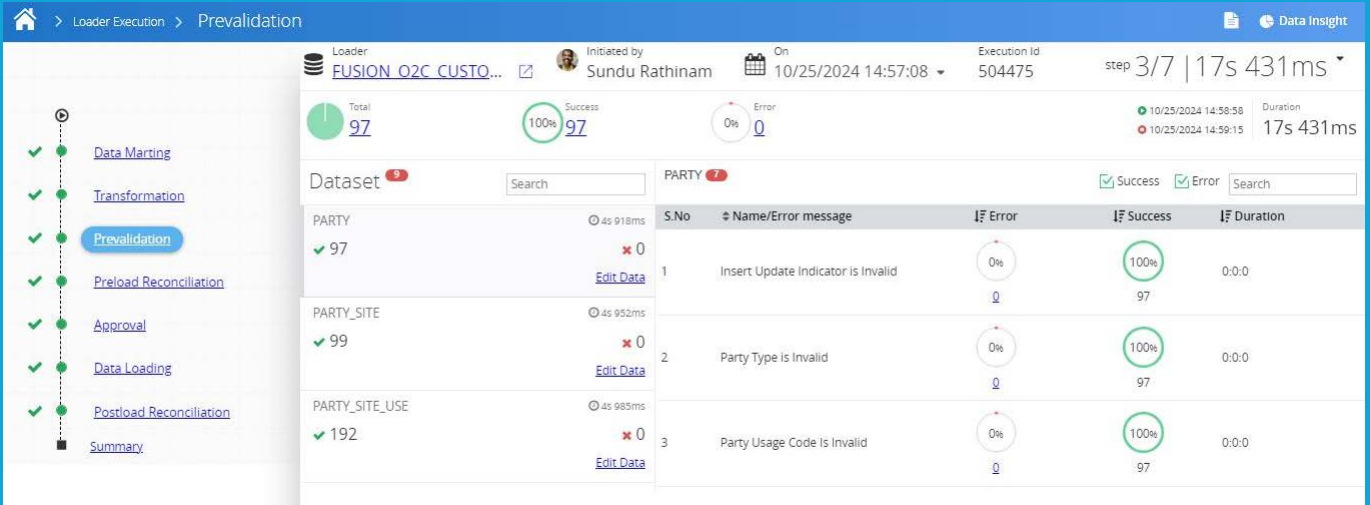
Dataset	Count	Time
PARTY	97	10/25/2024 14:58:57
PARTY_SITE	99	10/25/2024 14:58:57
PARTY_SITE_USE	192	10/25/2024 14:58:57
LOCATION	99	10/25/2024 14:58:57

Transformation Steps Table:

S.No	Name	Type	Untransformed	Transformed	Duration
1	Party Original System	Lookup	0%	100%	884ms
2	Insert Update Indicator	Lookup	0%	100%	079ms

Validation:

Implements robust data quality controls using rule-based validation, profiling, and consistency checks. This ensures that data meets predefined standards for accuracy, completeness, and integrity before it progresses further in the pipeline.



The screenshot displays the 'Prevalidation' step of a data loader. The interface shows a progress bar on the left with steps: Data Mapping, Transformation, Prevalidation (highlighted), Preload Reconciliation, Approval, Data Loading, Postload Reconciliation, and Summary. The main area shows the following summary:

- Loader: FUSION_O2C_CUSTO...
- Initiated by: Sundu Rathinam
- On: 10/25/2024 14:57:08
- Execution Id: 504475
- Step: 3/7 | 17s 431ms
- Total: 97
- Success: 100% 97
- Error: 0%

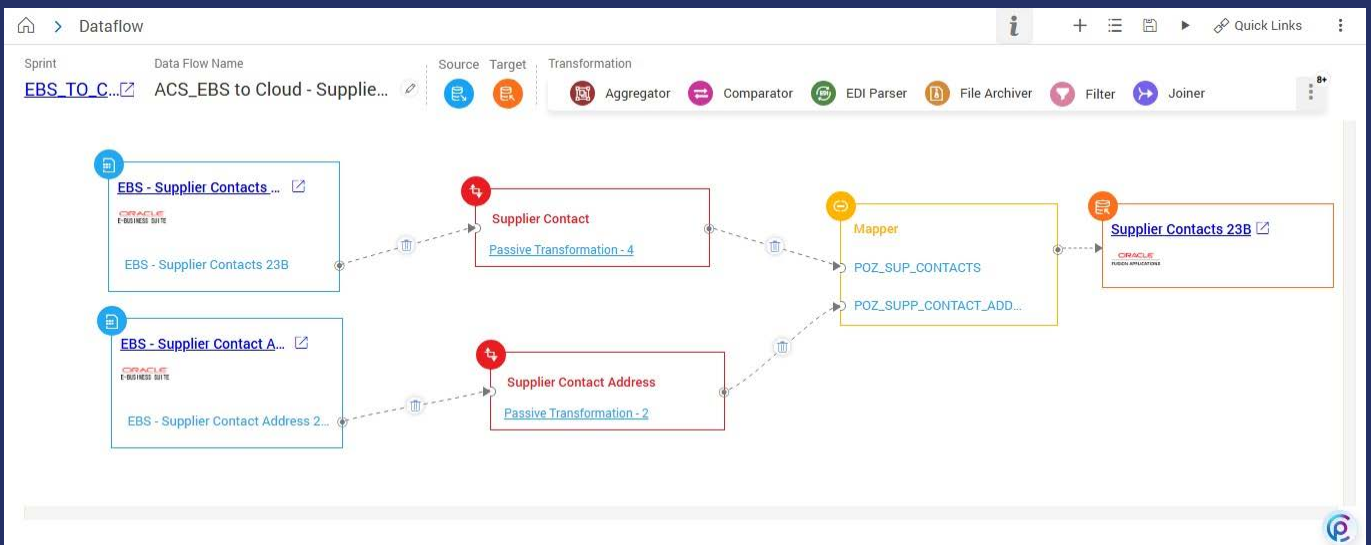
Below the summary, there is a table of datasets and a detailed error log:

Dataset	Success	Error
PARTY	97	0
PARTY_SITE	99	0
PARTY_SITE_USE	192	0

S.No	Name/Error message	Error	Success	Duration
1	Insert Update Indicator is Invalid	0%	100%	0:0:0
2	Party Type is Invalid	0%	100%	0:0:0
3	Party Usage Code is Invalid	0%	100%	0:0:0

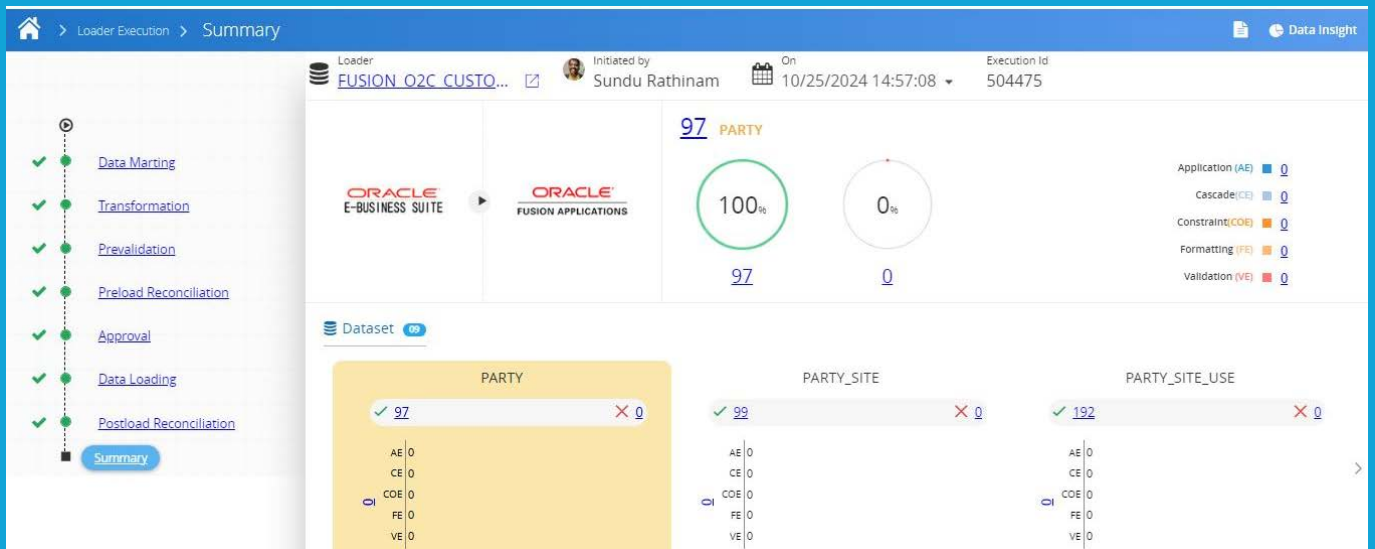
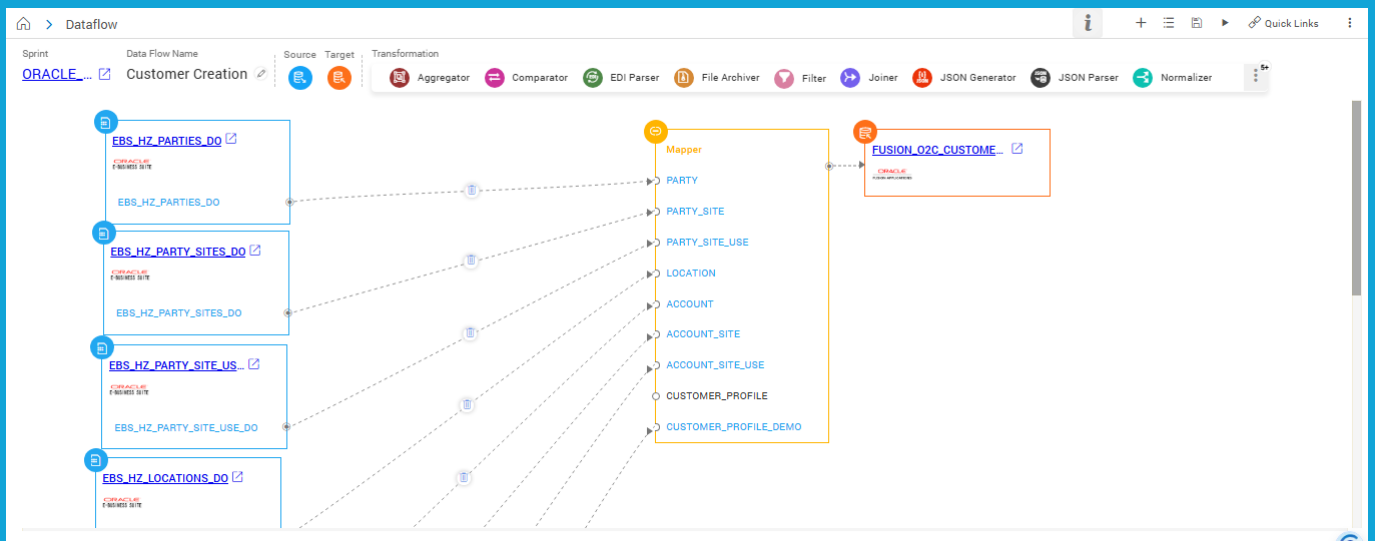
Orchestration:

Coordinates end-to-end workflow execution by managing job sequencing, interdependencies, and scheduling. It ensures that data processes run in the correct order, with optimized resource utilization and minimal manual intervention.



Routing:

Intelligently directs processed data to appropriate target systems based on predefined logic and conditions. This ensures efficient data distribution across platforms such as data warehouses, applications, or downstream analytics systems.



Monitoring:

Provides real-time visibility into data operations through dashboards, execution logs, alerts, and performance tracking. This enables proactive issue detection, operational transparency, and complete control over the data pipeline lifecycle.



ChainSys in Action: Real-World Data Integration Success

Engineering a Cloud-connected construction business with dataZap

Business Situation

Founded in 1954, the client is a U.S.-based, family-owned construction company offering services across planning, program management, preconstruction, general contracting, construction management, design-build, and turnkey development, with headquarters in Minneapolis and operations across multiple U.S. cities and internationally.

The client was facing:

- Reliance on Oracle EBS R12 as the core ERP and Procore for project management across construction sites
- Master data is maintained in Oracle, while critical data, such as employees, vendors, projects, and change-related commitments were also required in Procore
- A need to transfer change event data from Procore into Oracle Financials for finance processes
- Lack of integration between systems, resulting in manual dual data entry
- Delays in data availability and processing across platforms
- Data inconsistencies affecting operational efficiency and decision-making

Project Scope



Two-Way Integration:

Real-time, two-way data integration between Procore (Cloud) and EBS R12 (On-prem) using dataZap.



Key Data Elements:

Integration involved Employees, Vendors, Projects, Cost Codes, Commitments, and Change Events.



Mapping Management:

Some mappings were stored in the dataZap repository for efficient data processing.



High Transaction Volume:

The solution processed about 2,000 transactions per day with minimal downtime.



Continuous Operation:

The integration process worked flawlessly 7 days a week.

Solution



Event Creation and Initial Data Pull:

The process begins when a Change Event is created in Procure. This event triggers the dataZap user to pull specific data (CE ID and project ID) from Procure, along with the relevant EBS (Oracle E-Business Suite) master data.



Validation and Error Handling:

After pulling the data, it undergoes a pre-validation procedure. If this validation fails, the process stops and error notifications are sent. If it passes, the data is loaded into the EBS Validation Service, which checks for errors in the data.



Handling Errors:

If errors are found during validation, the process flows through the EBS Error Service. Errors are then logged, and only the successful records are processed further, while failure records are handled separately.



Data Push and Master Record Updates:

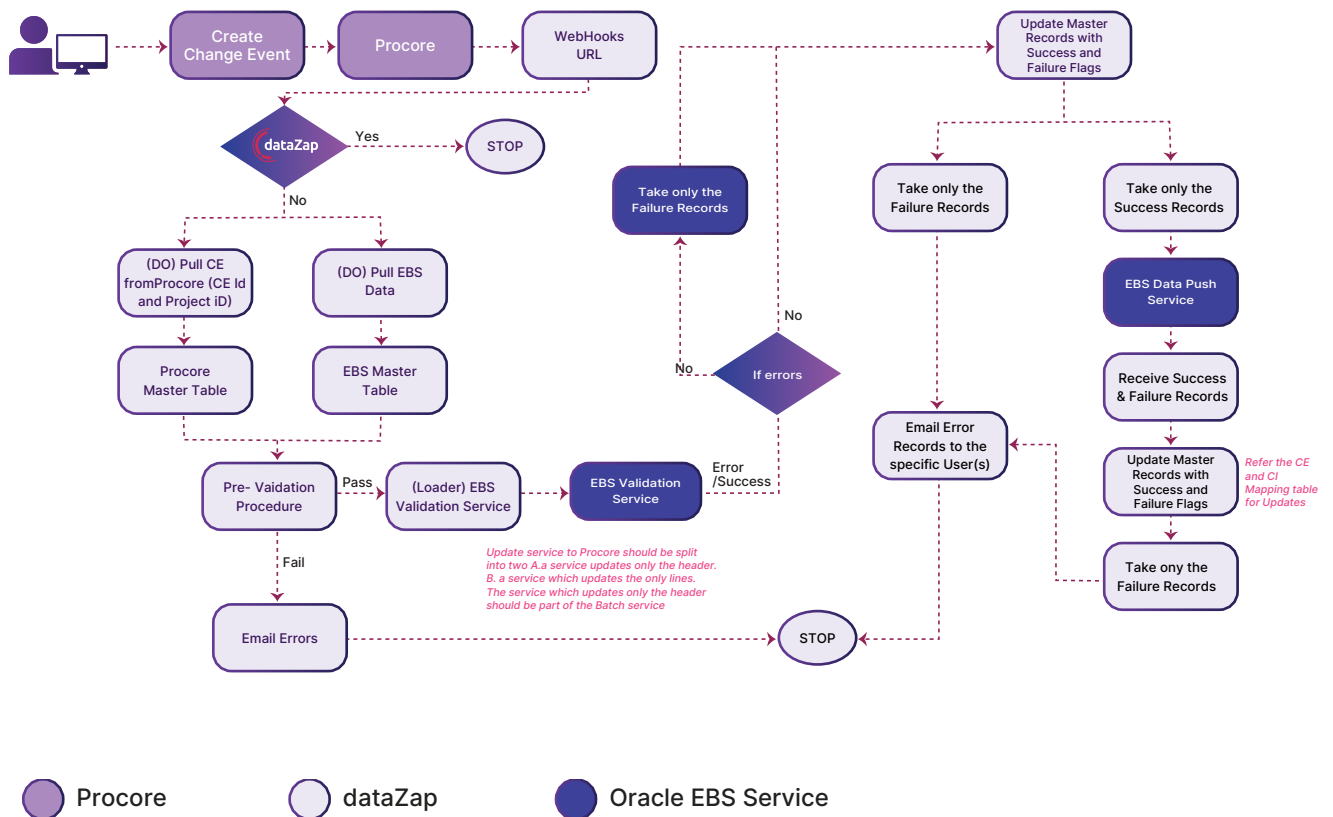
Successful records are pushed to the EBS Data Push Service, where they are processed and updates are made to the Master Records. Both success and failure flags are updated accordingly.



Final Updates and Synchronization:

The final steps involve synchronizing the updates back to Procure by pushing only the successful records and handling any remaining failure records. This ensures that the CE and CI Mapping tables are updated correctly, completing the cycle.

Illustration:



Benefits

- **Enhanced Data Quality:** The integration resulted in a 30% improvement in data quality, ensuring that data was accurate and up-to-date.
- **Reduction in Dual Data Entry:** The need to perform dual data entry for Team Members, Projects, Vendors, Cost Issues, Commitments, and Change Events was eliminated.
- **Time Saving:** The integration resulted in a time saving of 1-2 hours per day.
- **Improved Efficiency:** The integration resulted in a boost in overall efficiency.
- **Substantial Cost Savings:** The integration resulted in an annual cost saving of about USD 100,000.



World's leading Brand Trust Our Data Solutions

Chainsys Unveiled



Places



People



Process



Projects



Product

Global Headquarters



1500+ Data Professionals Worldwide

1000+ Data Engineering Experts (Development, QA, DevOps, Security & Support) Team

300+ Enterprise Applications Experts

90% Employee Retention Rate

Hub & Spoke Architecture

Data Management Accelerators with 10000+ templates

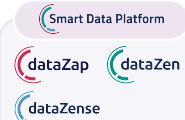


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Our Differentiators

10000+

Smart Data Templates for 200+ Applications

70%

Cost & Time Reduction in Data Ingestion Migration

99.9%

Data Quality Improvement

360°

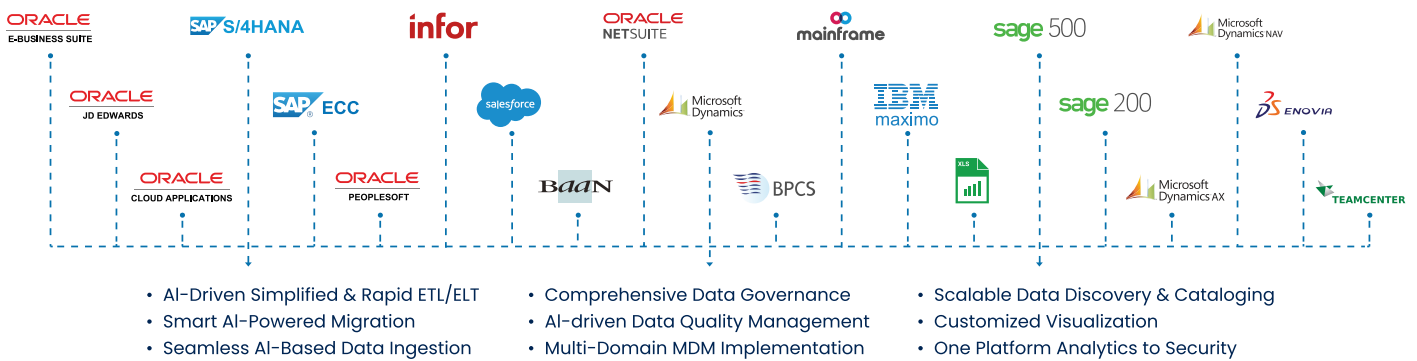
Perspective with Automated Governance Protocols

Low / No code

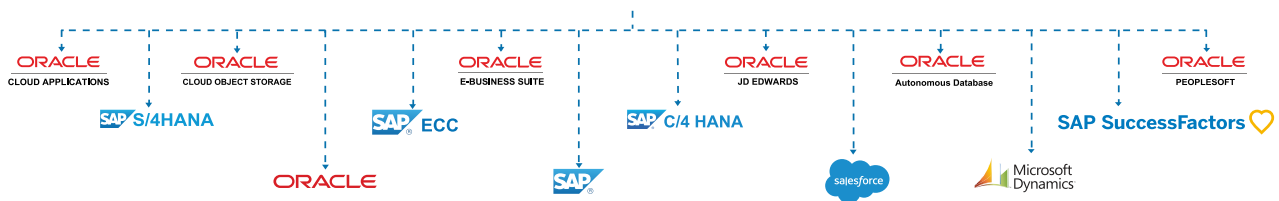
Approach for ease of Development & Rapid Deployment

Effortless Connection with Smart Data Platform

Migrate or integrate data seamlessly from any source to any destination ensuring 99% quality and governance.



Smart Data Platform™



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I am honored to serve as ChainSys's CEO during this remarkable era of Digital transformation, as ChainSys is on an exciting trajectory to support this shift and help customers design, implement, and deploy the latest innovations in enterprise data management. We are honored to have a great customer base, hard-working & multi-skilled employees across the globe, and a respectful position in all the markets where we compete.

Sundu Rathinam Founder/ CEO/ CTO, ChainSys

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