Activating Enterprise Intelligence:

Unlocking Business Value with ChainSys dataZense- The Active Metadata Management Solution

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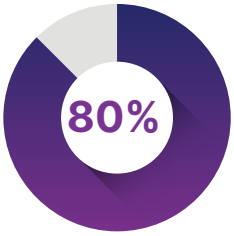
Executive Summary

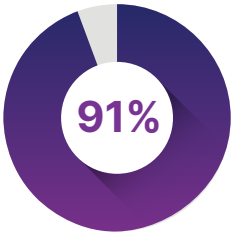
Enterprises are flooded with data, but real insight comes from understanding it. Most already hold valuable metadata scattered across systems, yet struggle to connect and activate it in real time. That's where Active Metadata Management (AMM) changes everything. AMM isn't just a catalog; it's a living system that continuously captures, enriches, and operationalizes metadata to drive governance, compliance, and innovation.

ChainSys dataZense powers this shift with automated harvesting, AI-driven lineage mapping, rule-based governance, and real-time integration—turning data visibility into true data activation. This guide shows how ChainSys dataZense helps you move from disconnected silos to an intelligent ecosystem where every metadata change sparks insight and every decision is backed by living context.

Compelling insights why a Active Metadata Management Solution is essential for modern enterprises:

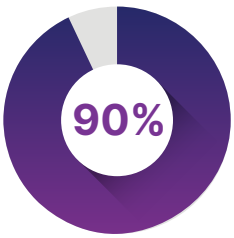


80% of Data Analysts' Time is Spent on Data Discovery and Preparation
According to IDC, analysts spend 82% of their time finding, cleaning, and organizing data rather than analyzing it.
(IDC)



91% of Organizations Face Data Governance and Compliance Challenges
According to the study, 91% of companies are non-compliant with CCPA, and 94% are unprepared for GDPR.
(Spiceworks)

Poor Data Quality Costs Companies $12.9 Million Per Year on Average
Gartner estimates that bad data costs businesses millions annually due to incorrect analytics, misinformed decisions, and operational inefficiencies. **(Gartner)**



90% of Business Leaders Are Applying AI to Enhance Operational Resilience
An Accenture study reveals that 90% of business leaders are leveraging AI to improve aspects of operational resilience, which includes data-driven capabilities. **(Accenture)**

Chapter 1: Understanding Active Metadata Management

1.1 Definition of Active Metadata Management

Active Metadata Management is the practice of continuously collecting, connecting, enriching, and operationalizing metadata so it can automatically inform, govern, and control data across its lifecycle.

In practical terms, this means metadata is used

- Understand how data flows across systems
- Detect and respond to changes in real time
- Support impact analysis before changes occur
- Enforce governance rules automatically
- Provide context and trust for analytics & AI

1.2 How It Differs from Traditional Metadata Management

Capability Area	Traditional (Manual / Passive)	Active Metadata Management
Metadata Capture	✗ Periodic, tool-specific extraction	✓ Continuous, system-wide ingestion
Lineage Visibility	✗ Partial or inferred	✓ End-to-end, cross-platform
Change Impact Analysis	✗ Manual, time-consuming	✓ Automated, real-time
Governance Enforcement	✗ Policy documentation only	✓ Embedded and enforced

Capability Area	Traditional (Manual / Passive)	Active Metadata Management
Business Context Mapping	Manually curated	Automatically enriched
Data Quality Awareness	Reactive issue detection	Proactive monitoring
Compliance Readiness	Point-in-time audits	Continuous compliance
AI Explainability	Limited traceability	Full lineage and context

1.3 What Makes Metadata "Active."

Metadata becomes active when it stops functioning as background documentation and starts influencing how data is built, moved, and governed. Instead of being consulted after an issue occurs, active metadata is present during execution, providing context and control at the moment decisions are made. It continuously reflects the current state of the data ecosystem and helps prevent problems rather than explain them after the fact.

Metadata is considered active when it:

Detects change automatically:
Recognizes schema updates, pipeline modifications, and configuration changes as they happen.

Understands relationships and dependencies:
Maintains awareness of how datasets, transformations, reports, and systems are connected.

Influences operational decisions:
Feeds impact and risk information into approvals, validations, and change workflows.

Applies governance rules in real time:
Enforces policies, quality checks, and access controls without manual intervention.

Surfaces risk before execution:
Provides foresight into downstream impact so issues are addressed early.

1.4 How Active Metadata Operates as a Living Layer

Active Metadata Management introduces a layer that continuously sits across the enterprise data landscape. This layer is not tied to a single system or tool. Instead, it stays aware of how data is structured, transformed, governed, and consumed across platforms. As data changes, this metadata layer evolves with it, maintaining a current and shared understanding of how the data ecosystem operates.

As a living layer, active metadata:

- Spans across systems and platforms
- Continuously updates with change
- Maintains real-time lineage and context
- Bridges technical and business perspectives
- Supports governance and operations simultaneously
- Adapts as the data ecosystem evolves

1.5 What Active Metadata Management Is Not

Active Metadata Management is often mistaken for familiar tools or practices. The table below clarifies where AMM stops and where other approaches begin.

Common Misconceptions vs Reality	
A Data Catalog	Catalogs describe metadata. AMM uses metadata to drive decisions and actions.
Documentation	AMM is continuously updated and event-driven, not static or manual.
Governance Paperwork	AMM embeds rules into operations instead of relying on manual reviews.
A Reporting Layer	Catalogs describe metadata. AMM uses metadata to drive decisions and actions.
A platform Replacement	AMM works across existing systems rather than replacing them.
A one-time Setup	AMM evolves continuously as data and systems change.

Chapter 2: Types of Metadata in the Enterprise

Metadata is not a single concept. In an enterprise data landscape, metadata exists in multiple forms, each serving a distinct purpose. These metadata types are created at different stages of the data lifecycle and are used by different teams. Understanding these types is essential to building effective data governance, analytics, and operational control.

This chapter explains the primary types of metadata found in enterprise environments and why they must work together.

2.1. Technical Metadata

Technical metadata describes the structural and system-level characteristics of data. It is generated automatically by databases, applications, and integration platforms as data is created, stored, and transformed. This type of metadata is essential for understanding how data is physically organized and how it moves across systems.

Who Uses It

Data engineers

Integration teams

Platform and infrastructure teams

What It Includes

Tables, columns, and data types

Schemas and file structures

Source-to-target mappings

Transformation logic

System and application dependencies

2.2. Business Metadata

Business metadata provides meaning and context to data by translating technical structures into business-friendly language. It ensures that data is interpreted consistently across reports, dashboards, and analytical models.

What It Includes

Business definitions and terminology

KPIs, metrics, and calculations

Data ownership and stewardship

Usage guidelines and interpretation rules

System and application dependencies

Who Uses It

Business users

Data stewards

Product and operations teams

Analytics and BI teams

2.3. Operational Metadata

Operational metadata captures how data behaves during processing and usage. It reflects runtime activity and performance, helping teams monitor data reliability and identify issues quickly.

Who Uses It

Data operations teams

Platform support teams

Reliability and monitoring teams

What It Includes

Job execution status

Load schedules and frequencies

Processing times and data volumes

Error logs and alerts

Data freshness indicators

2.4. Governance and Compliance Metadata

Governance and compliance metadata define the rules and controls that govern how data should be accessed, used, retained, and protected. It plays a critical role in managing regulatory requirements and organizational policies.

What It Includes

Data classifications and sensitivity labels

Access and entitlement rules

Retention and archival policies

Regulatory and audit requirements

Who Uses It

Data governance teams

Compliance and risk teams

Security teams

Chapter 3: Understanding the Metadata Failure

3.1 Signals: What Enterprises Are Experiencing Today

Common Signals Observed Across Enterprises

- Difficulty answering basic lineage and impact questions
- High dependency on manual documentation
- Conflicting definitions across reports and systems
- Slow response to regulatory or audit inquiries
- Low confidence in analytics and AI outputs

What These Signals Indicate

- Metadata exists, but is fragmented
- No enterprise-wide metadata authority
- Governance is disconnected from operations

3.2 Where Metadata Actually Lives

ERP Systems

Table structures
Configuration metadata
Transaction definitions

Security & Governance Tools

Access rules
Policies and classifications

Data Integration & Cloud Platforms

Mappings & transformations
Pipeline schedules
Dependency logic

Analytics & BI Tools

Semantic models
KPIs and calculations

Metadata Generation Points

3.3 Symptoms of Fragmented Metadata

Operational Symptoms

Impact analysis performed manually

Release cycles extended due to uncertainty

Frequent post-deployment fixes

Governance Symptoms

Policies defined but inconsistently enforced

Audits depend on point-in-time evidence

Compliance checks are reactive

Analytics Symptoms

Conflicting dashboards

Limited explainability for AI models

Business users questioning data accuracy

Chapter 4: The ChainSys Smart Data Platform in Action

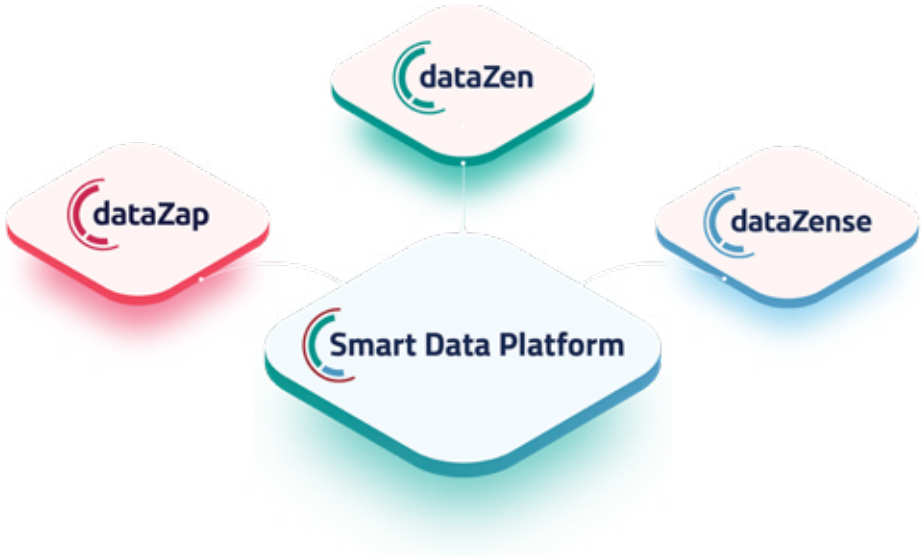
4.1 What is Smart Data Platform?

The ChainSys Smart Data Platform is an advanced, all-in-one solution designed to manage, integrate, govern, and analyze enterprise data across diverse systems, including Oracle, SAP, and other major ERP platforms. With a suite of intelligent tools and pre-configured templates, the platform empowers organizations to harness the full potential of their data while ensuring compliance, accuracy, and security. Whether it's data quality management, data integration, or advanced analytics, the Smart Data Platform provides a comprehensive and scalable framework to support your enterprise data initiatives.

- Simplified & Rapid ETL/ELT
- Smart Migration
- Seamless Data Ingestion

- Comprehensive Data Governance
- Top-notch Data Quality Management
- Multi-Domain MDM Implementation

- Scalable Data Discovery & Cataloging
- Customized Visualization
- One Platform→ Analytics to Security



4.2 Key Features and Benefits of Using ChainSys Smart Data Platform:

Unified Data Management

The platform consolidates data management processes into a single, unified solution. This includes data integration, data quality, master data management (MDM), data governance, and analytics, providing a holistic view and control over your enterprise data.

Pre-Built Templates and Adapters

With over 9000+ smart data adapters, the Smart Data Platform simplifies complex data management tasks. These templates cover setups, master data, transactions, and analytics, accelerating project timelines and reducing the need for custom development.

Advanced-Data Governance

The platform includes powerful data governance tools that ensure compliance with industry standards and regulations. Automated workflows, audit trails, and data lineage tracking help maintain data integrity and transparency across all systems.

Scalable Data Integration

Designed to handle the integration needs of both small businesses and large enterprises, the platform's scalable architecture can manage data from a few thousand records to billions of records. It ensures seamless data flow across multiple applications and platforms, regardless of their complexity.

Comprehensive Data Quality Management

The Smart Data Platform includes robust data profiling, cleansing, and enrichment tools, ensuring that high-quality data is maintained throughout the organization. By addressing data quality at the source, the platform minimizes errors and inconsistencies, leading to more reliable business insights.

Real-Time Analytics and Reporting

The platform offers real-time analytics and reporting capabilities, providing instant access to actionable insights. Customizable dashboards and reports enable organizations to monitor key performance indicators (KPIs) and make informed decisions based on accurate, up-to-date data.

4.3 How the Smart Data Platform Addresses Data Management Challenges:

Complex Data Environments

Managing data across various systems, applications, and databases can be daunting. The Smart Data Platform's integration capabilities streamline data flow across diverse environments, reducing complexity and ensuring that all data sources are harmonized.

Data Quality Issues

Poor data quality can lead to inaccurate reporting and decision-making. The Smart Data Platform's data quality management tools proactively address data issues, ensuring that only clean, validated data is used in critical business processes.

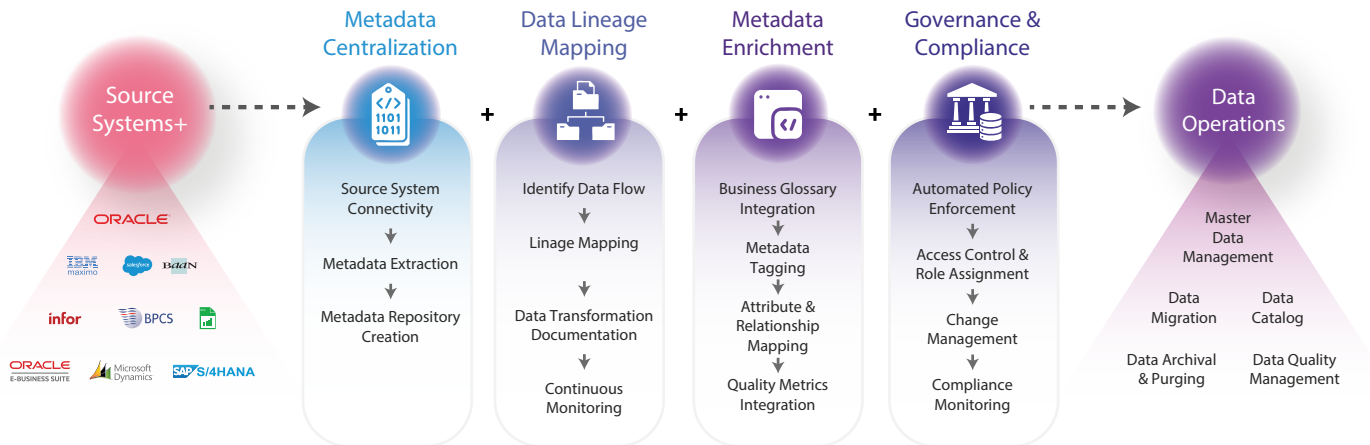
Compliance & Regulatory Requirements

Organizations face stringent data governance requirements. The platform's advanced governance features ensure compliance with industry regulations, offering features such as data masking, role-based access control, and automated audit trails.

Data Silos

Data silos can hinder enterprise-wide data initiatives. The Smart Data Platform breaks down these silos by providing a unified data management approach, enabling seamless data sharing and collaboration across departments.

4.4 The ChainSys Active Metadata Management Approach



Step 1 - Metadata Centralization

Metadata centralization begins with building a clear, factual understanding of source data before any governance or execution steps are applied. This process relies on data profiling and pattern recognition to examine structures, values, formats, and distributions, making issues such as missing data, duplicates, invalid values, inconsistencies, and sensitive information immediately visible. By understanding how data behaves and where quality gaps exist, organizations can accurately classify data, define rules, and determine cleansing requirements at the source, ensuring only reliable, well-understood data progresses further—below are the steps carried.

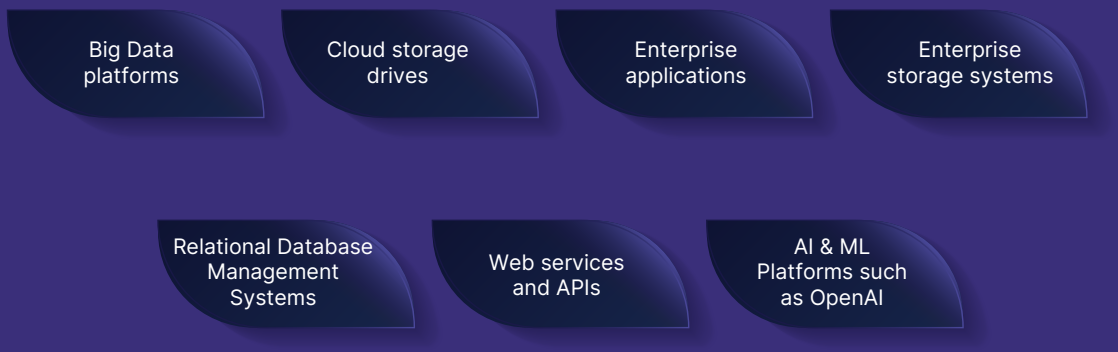
Step 1.1 Source Systems Connectivity

Source systems connectivity establishes the bridge between enterprise data platforms and the data profiling environment. It ensures secure, reliable, and scalable access to data across diverse technologies.

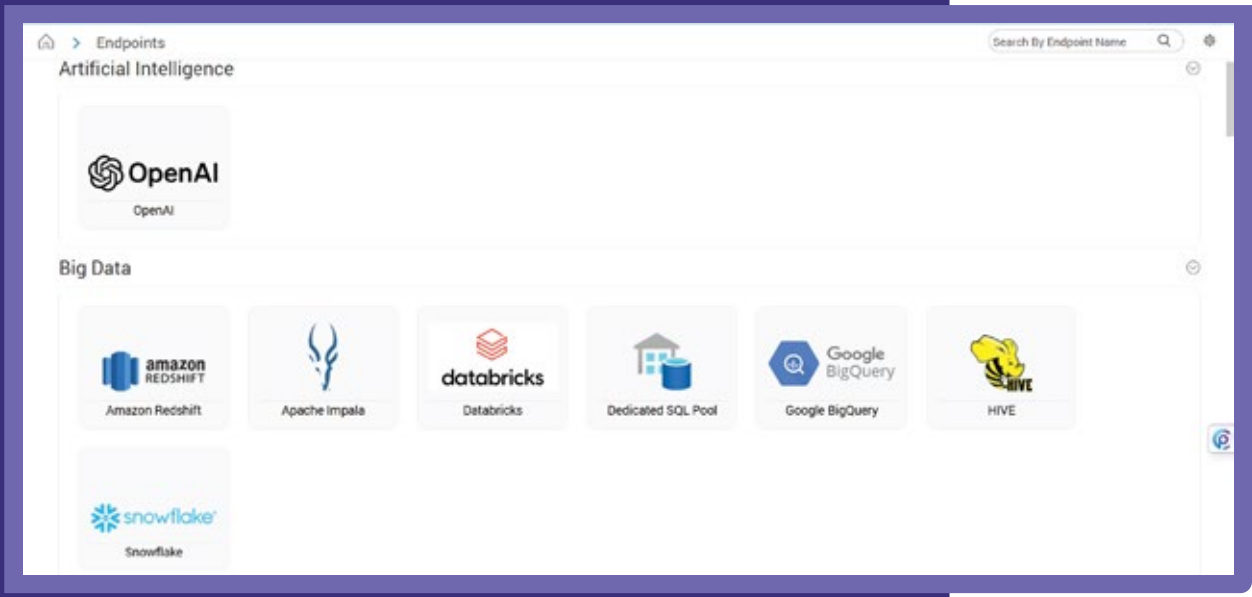
1.1.1 Endpoints and Supported Data Sources

Endpoints represent the source locations from which data resources originate. They act as the gateway to accessing different data systems within an organization. By configuring an endpoint, users can quickly connect to a new data source and begin retrieving data for profiling, analysis, processing, or governance.

Commonly supported endpoint types include:



Endpoints and Supported Data Sources - A Product View



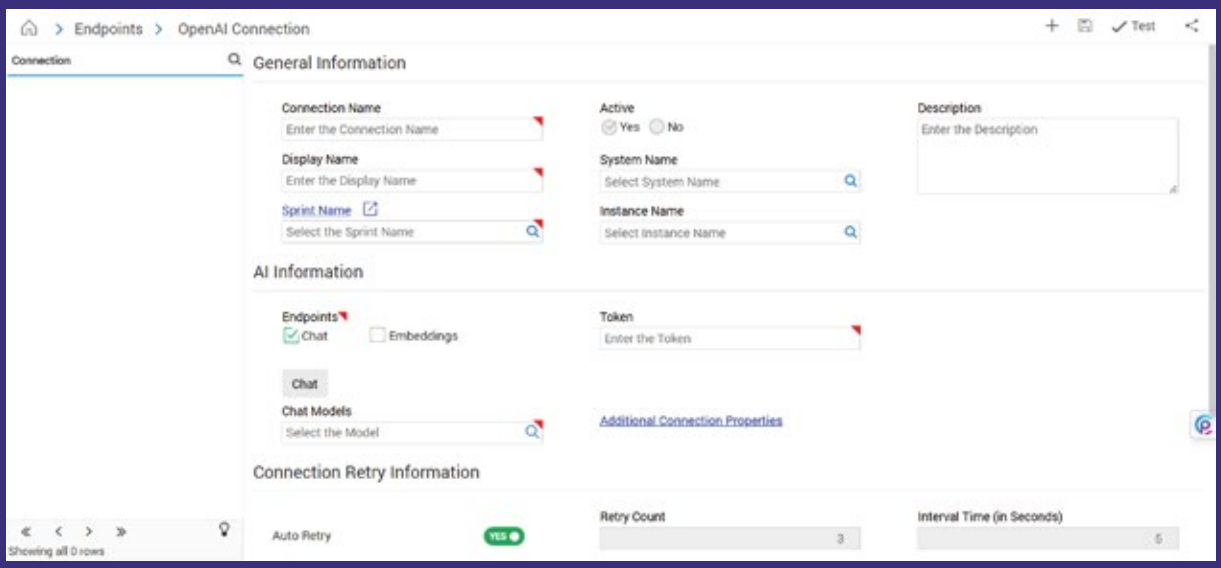
1.1.2 Connection Configuration and Validation

Connections operationalize endpoints by supplying authentication, network, and configuration details required for access. A connection ensures that data can be securely read from source systems and, when required, written to target systems.

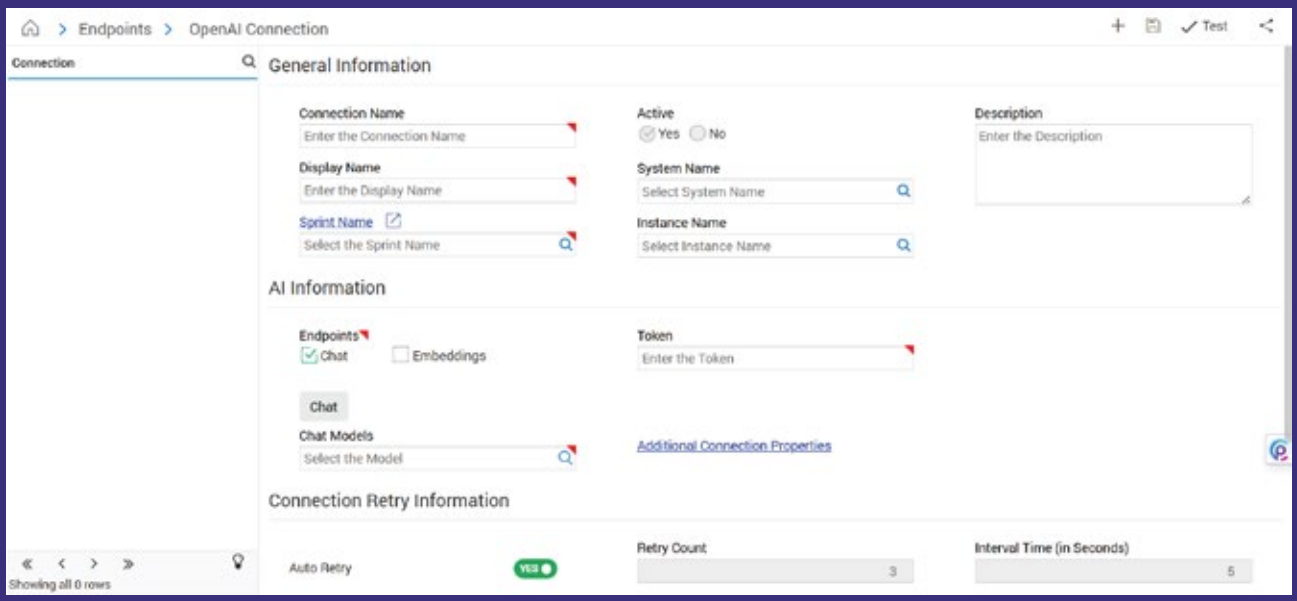
Key characteristics of connections include:

- Secure credential management
- Validation to ensure availability and access rights
- Reusability across multiple profiling and integration workflows

Connection Configuration - A Product View



Connection Configuration - A product View



Step 1.2 Metadata Extraction

Metadata extraction is the point where data access turns into data understanding. After connectivity is established, source systems are systematically scanned to capture metadata that explains what the data is, where it resides, how it is structured, and how it relates across the enterprise. Automating this step removes manual documentation and creates a consistent, trusted inventory of data assets.

The primary objectives of metadata extraction are to create enterprise-wide visibility into data assets, capture structural and technical metadata in a standardized manner, and lay the foundation for profiling, lineage, governance, and data discovery. Metadata extraction not only captures static information such as tables, columns, and data types, but also prepares the environment for deeper, dynamic insights generated through data profiling.

Key objectives of metadata extraction include:

- Enabling data discovery and reuse
- Creating visibility into enterprise data assets
- Capturing structural and technical metadata consistently
- Establishing the foundation for profiling, lineage, and governance

1.2.2 Data Profiling as Part of Metadata Extraction

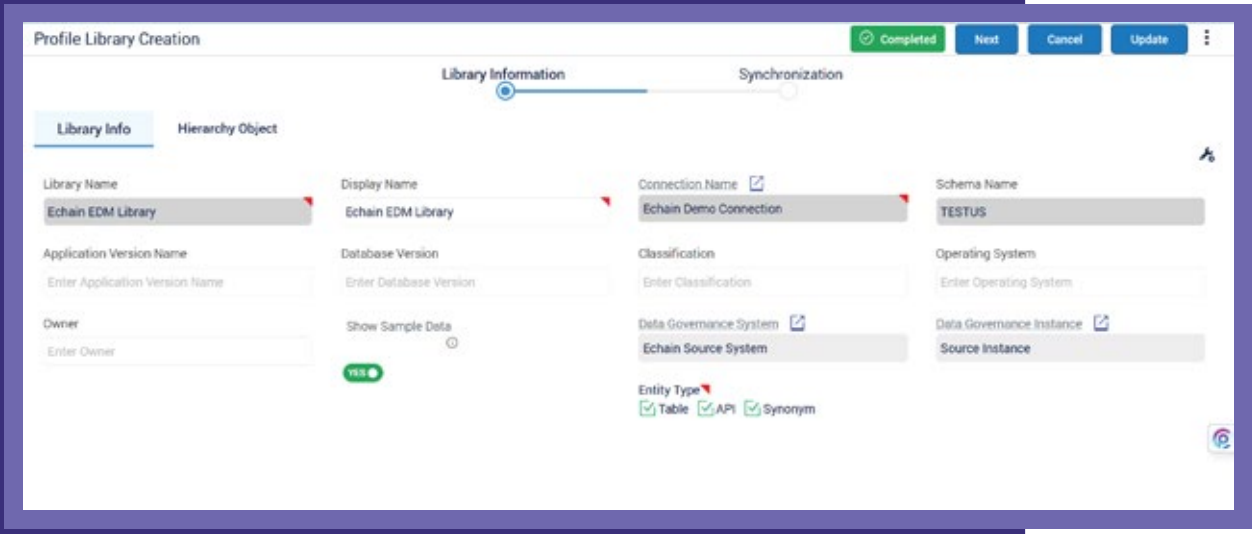
Data profiling is a core capability within metadata extraction that transforms extracted metadata into actionable intelligence. It analyzes data content to assess quality, structure, patterns, and relationships, enabling organizations to move beyond knowing where data exists to understanding how it behaves and whether it can be trusted. Profiling applies across structured, semi-structured, and unstructured data, enriching metadata with operational and analytical context. Below are the steps carried.

1.2.3 Configure Your Library for Smarter Data Insights

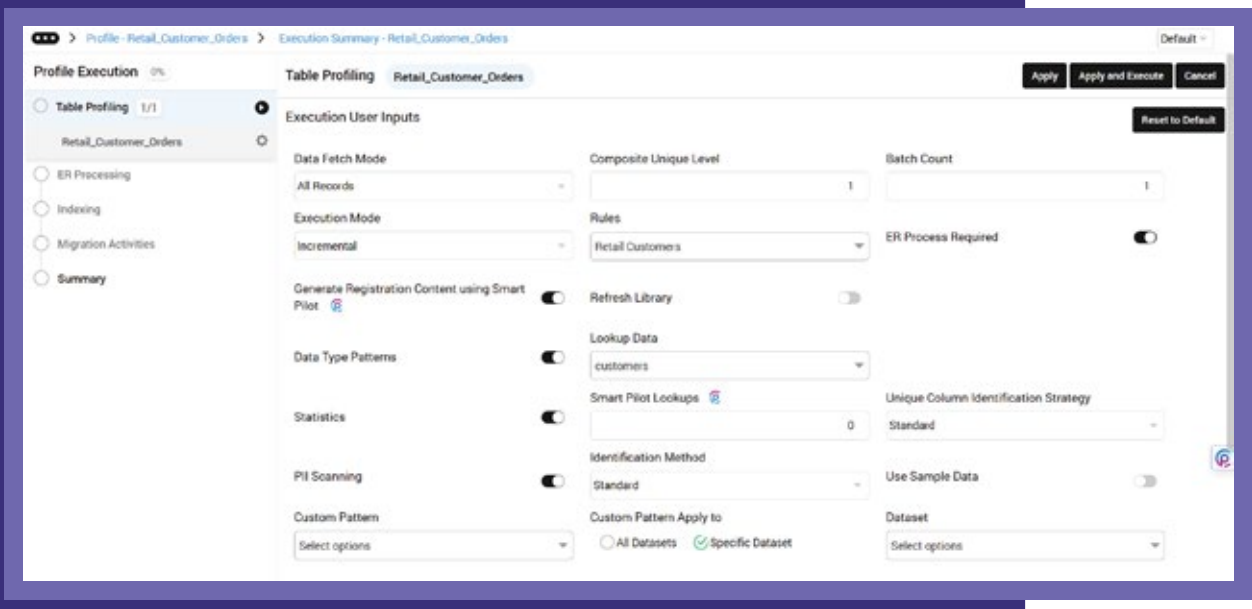
Data profiling begins with creating a library, which acts as a centralized repository for storing metadata and profiles. The library provides the foundation for profiling and cataloging activities.

Start your data profiling by creating a powerful, centralized library that brings all your metadata and profiles under one roof. Once your library is ready, a synchronization process automatically gathers all relevant data assets, ensuring your library is current, comprehensive, and ready for profiling. With this foundation, your data is prepared for deeper insights.

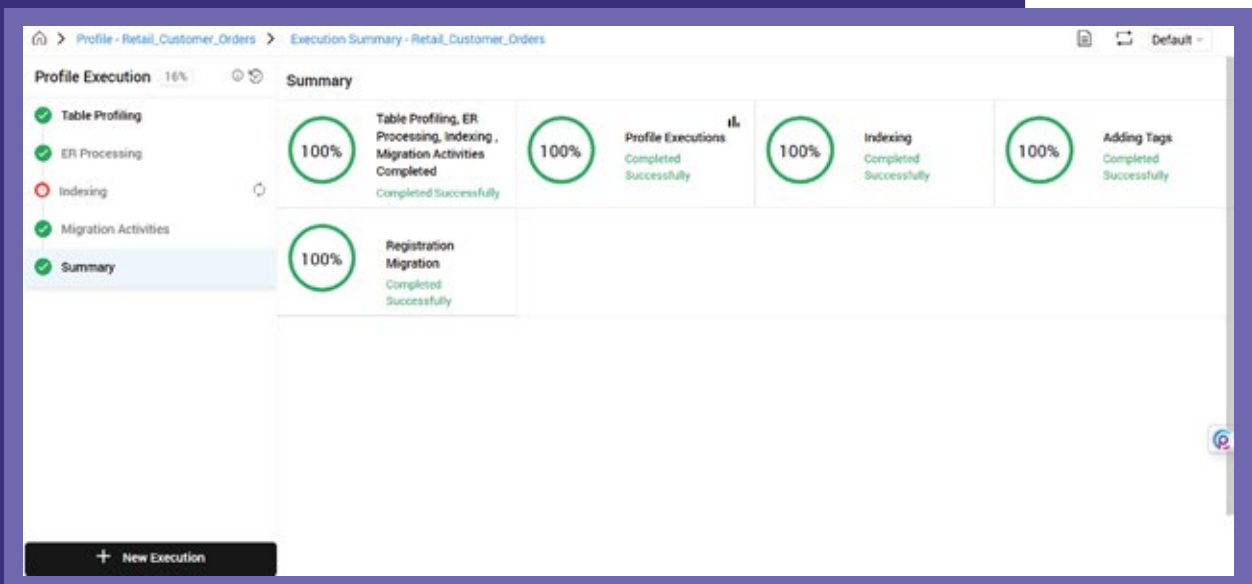
Profile Library Creation - A Product View



Profile Execution - A Product View



Profile Summary - A Product View



Advanced Profiling Options:

Identifying Patterns

Understand your data at a deeper level. This option detects data type patterns and unique fields during profiling, highlighting trends and structures while ignoring irrelevant columns for precise analysis.

Change Data Capture (CDC)

Stay ahead of the curve by capturing incremental changes in your data sources. CDC ensures that your table data is always up to date, even when running incremental profiling, so you never miss critical updates.

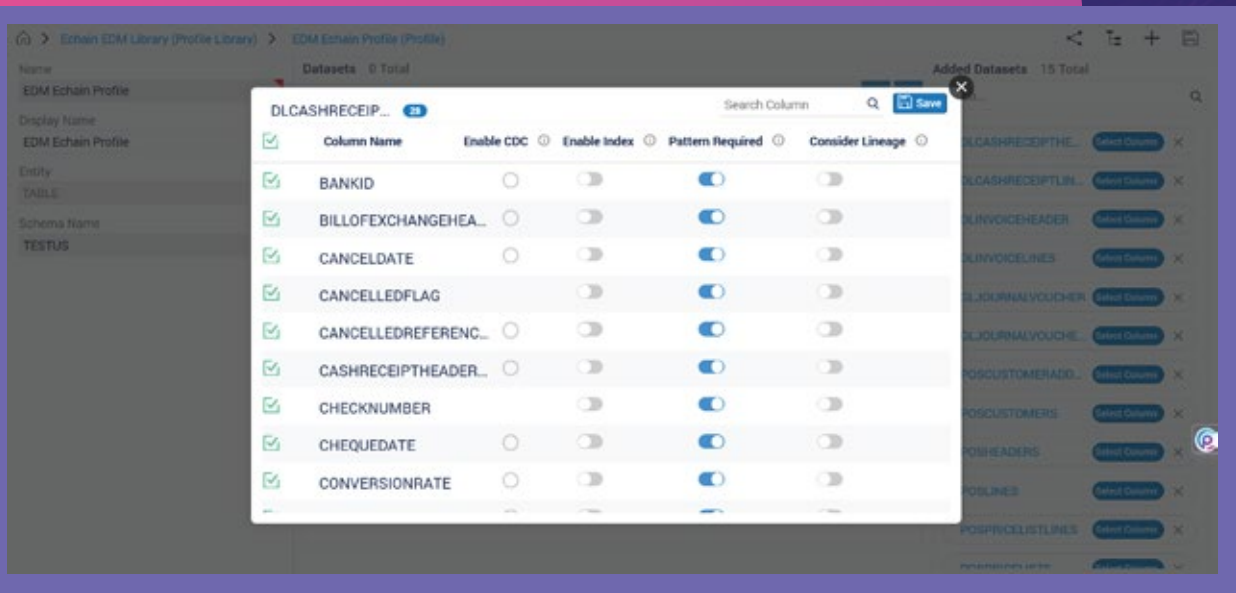
Indexing

Make your data instantly discoverable. By inserting profiling results into an indexing server like Solr, search and retrieval become faster and more efficient, empowering teams to find the right data when they need it.

Considering Lineage

Gain a complete view of how your data moves and transforms across systems. With meta and tag lineage, you can visualize both unique and non-unique relationships, uncovering hidden connections and ensuring data integrity.

Advanced Profiling Options - A Product View



Step 1.3 Metadata Repository Creation

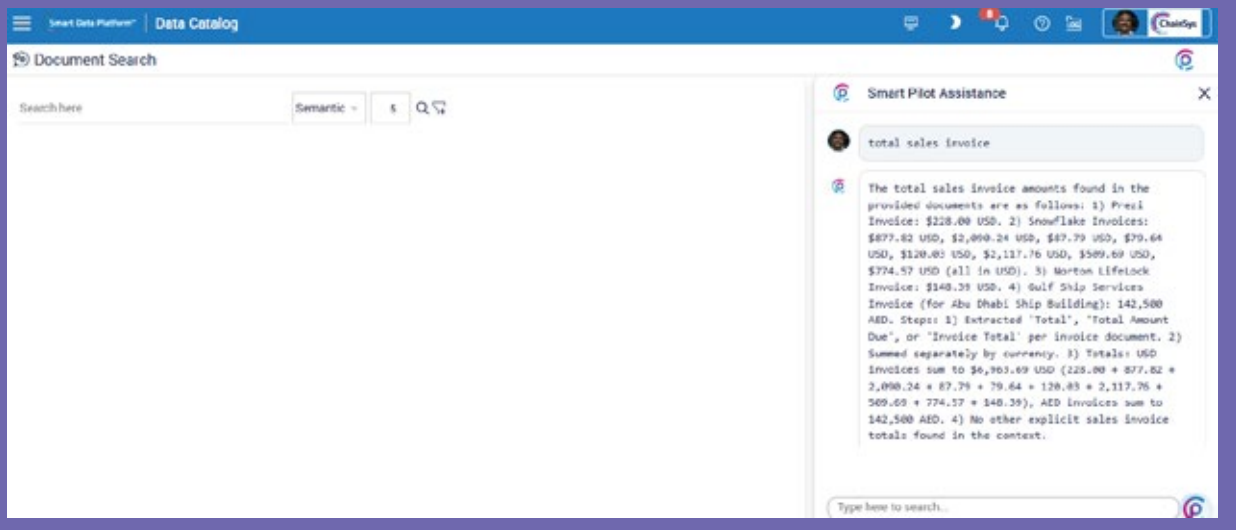
A metadata repository serves as the enterprise's single source of truth for data knowledge. It consolidates metadata, profiling insights, lineage, and governance information.
Catalog profiling transforms individual profiles into a searchable, governed metadata repository.

The catalog enables:

- Centralized data discovery - symantic
- Self-service access for business and technical users
- Improved collaboration and trust in data

By aggregating multiple profiles, the catalog provides a holistic view of enterprise data assets, supporting informed decision-making and governance at scale.
A structured approach encompassing source systems connectivity, metadata extraction, data profiling, and metadata repository creation enables organizations to unlock the full value of their data.

Document Search
- A Product View



Step 2- Data Lineage Mapping

Understanding the flow and relationships of data is critical for effective metadata management. Lineage and Entity Relationship (ER) processing provide visibility into how data moves across systems, how entities are connected, and how transformations occur. These processes enhance data governance, impact analysis, and overall trust in enterprise data.

Lineage processing detects data transformations across systems by tracking similarities in data across profiles within the catalog. This helps identify interrelationships based on column names, tags, and data patterns.

Step 2.1 Identify Data Flow

This step identifies how data moves across systems, pipelines, and processes. It captures ingestion paths, integration flows, batch processes, and real-time data exchanges. Data flow identification establishes the foundation for understanding dependencies across the enterprise data ecosystem.

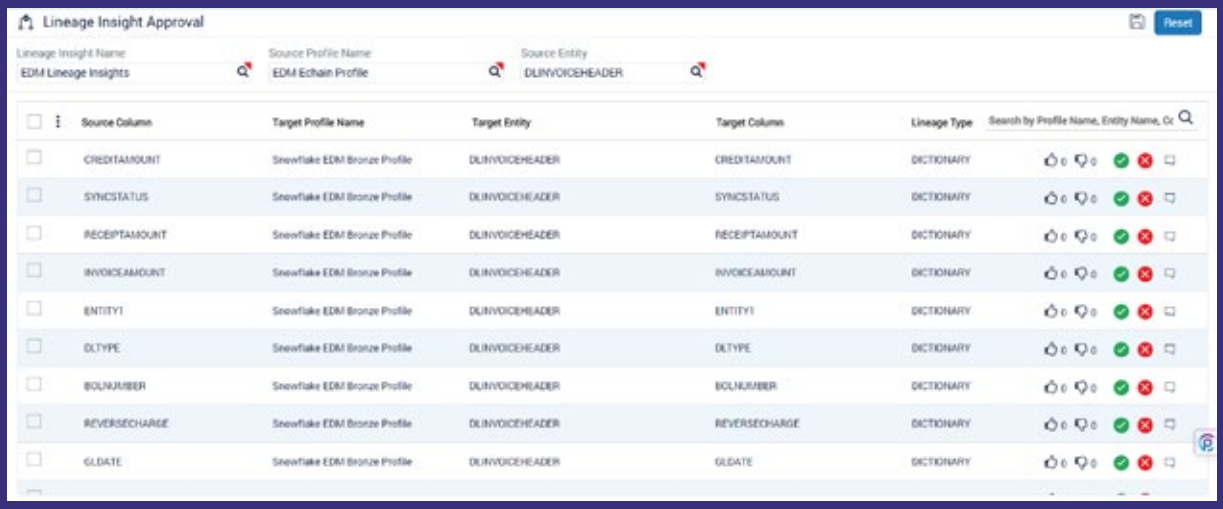
Step 2.2 Lineage Mapping

Lineage mapping visually and logically traces data from its origin through intermediate stages to its final destination. It documents relationships across systems, tables, columns, and reports, creating a complete end-to-end view of data movement and dependencies. Below are the few Lineage Visualization:

2.2.1 Meta Lineage

The Meta Lineage option is used to fetch column-name relationships between tables in selected profiles. It identifies the mapping between source and target columns, providing insight into how data moves and transforms across different datasets.

Meta Lineage - A Product View



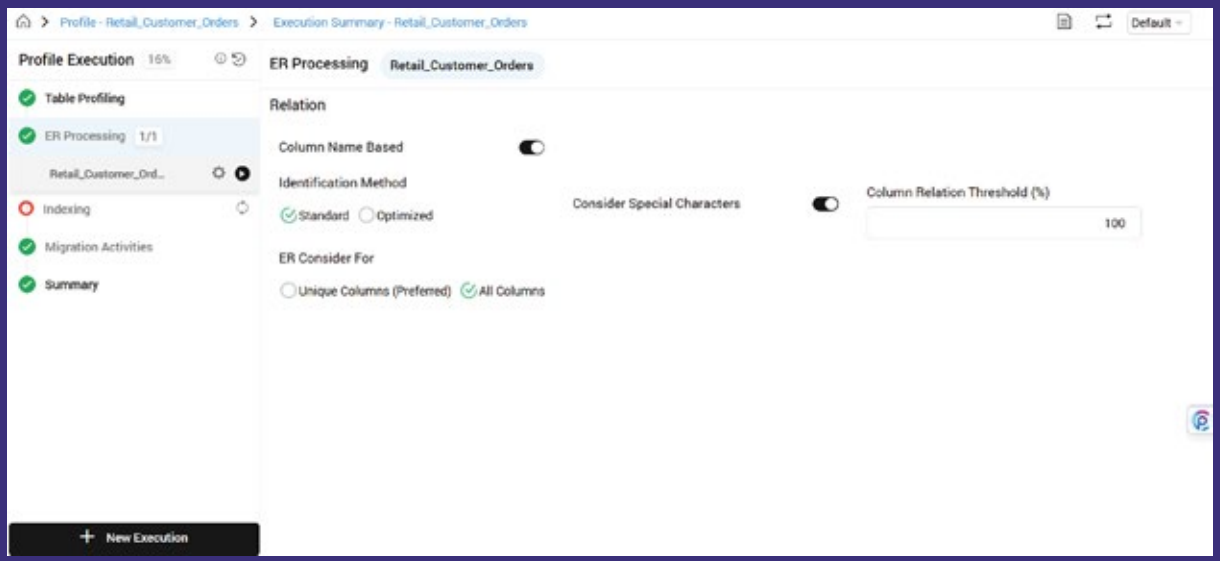
2.2.2. Tag Lineage

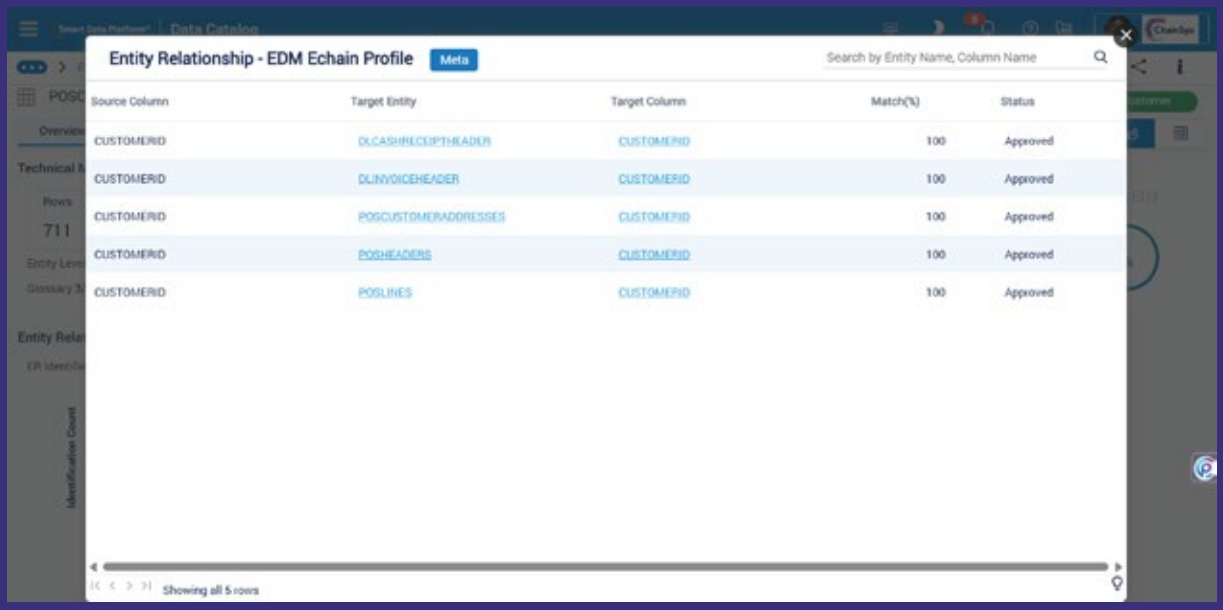
Tag Lineage identifies similarities between entities' tags. This allows organizations to recognize semantically related entities even if their column names differ. Matching entities must meet a defined similarity threshold to establish lineage.

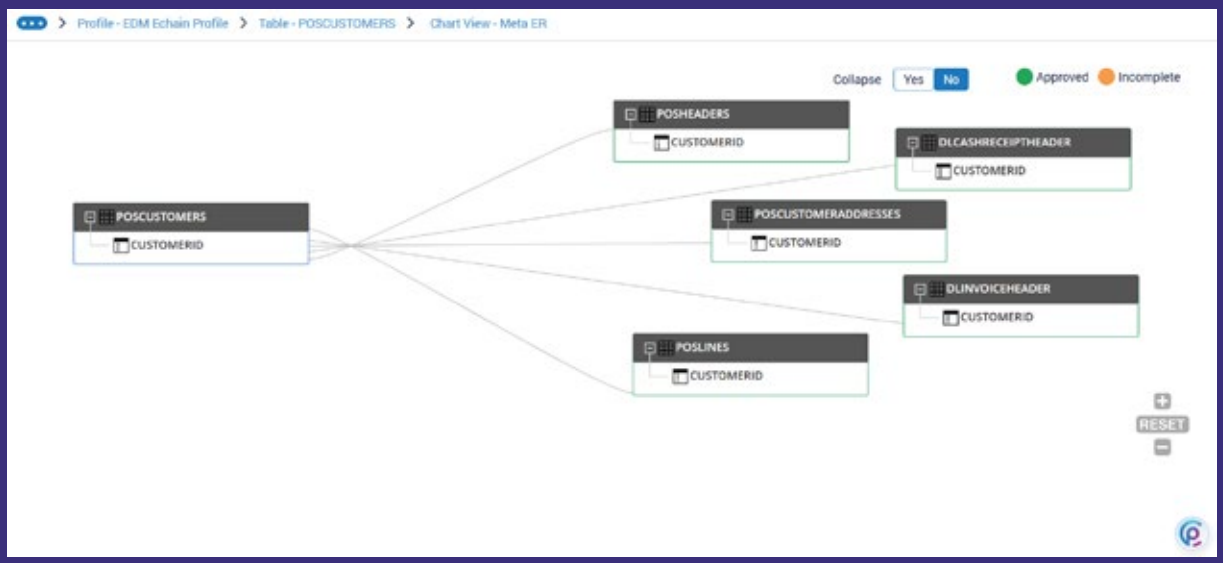
2.2.3. Entity Relationship (ER)

Entity Relationship processing ensures that entities are accurately identified and linked across different data sources, resulting in a coherent and organized catalog.

Entity Relationship (ER) - A Product View





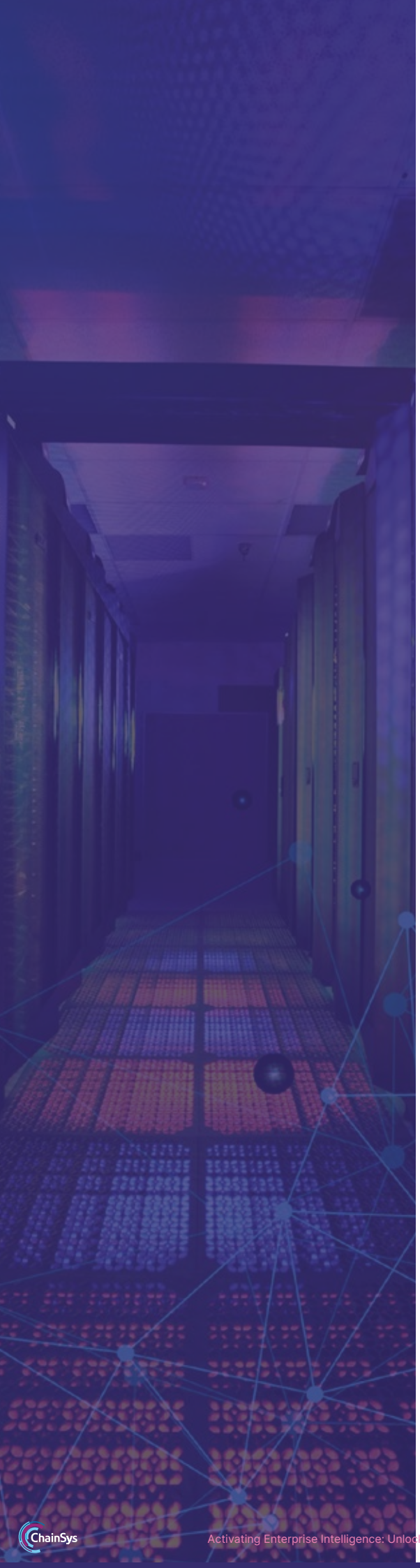


Step 2.3 Data Transformation Documentation

This step captures the transformation logic applied to data as it moves through pipelines. It documents calculations, filters, joins, aggregations, and business rules implemented within ETL, ELT, or integration processes. Transformation documentation preserves logic that is often embedded in code or tools.

Step 2.4 Continuous Monitoring

Continuous monitoring tracks changes in data flows, transformations, and dependencies over time. It detects modifications to schemas, pipelines, or logic and updates lineage automatically. Monitoring ensures lineage remains accurate as systems and integrations change.



Step 3: Metadata Enrichment

Metadata Enrichment adds business meaning by linking technical metadata with business glossary terms, tags, attributes, and relationships. This is where data becomes understandable to both technical and business users, enabling shared definitions, improved trust, and better collaboration across teams.

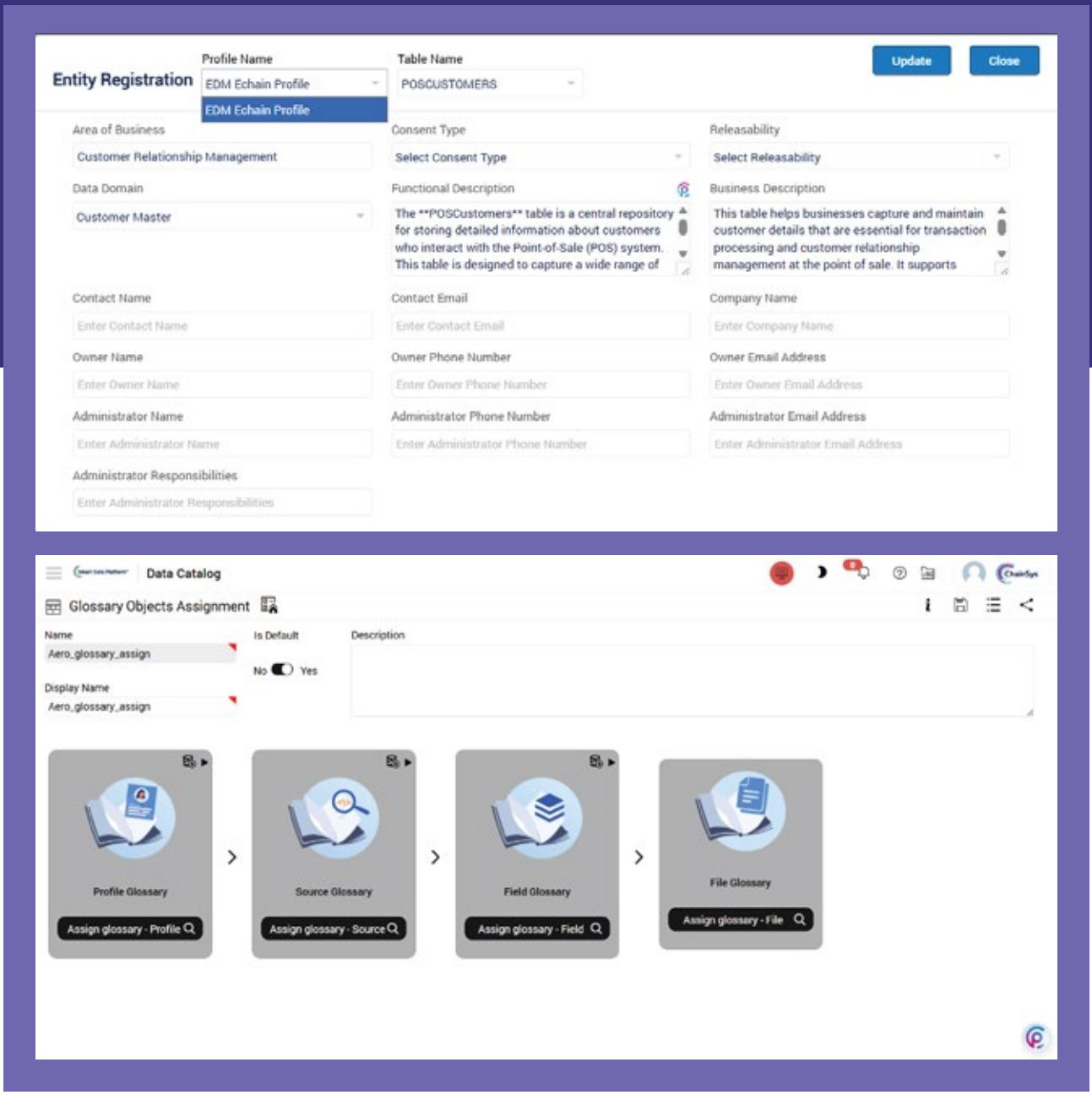
Step 3.1 Business Glossary

A Business Glossary serves as a structured repository of business terms and definitions, enhanced through glossary objects. A glossary object is a collection of customized fields designed to meet specific business requirements. These fields capture essential business, regulatory, or operational information during the registration process.

The fields defined in a glossary object are used to collect user input at the time of registration. Whether these fields appear in the registration workflow depends on the assignments configured in the glossary object assignment. This flexibility allows organizations to tailor the registration experience based on data type, domain, or governance needs.

Creating a glossary object involves customizing the required fields and associating them with predefined value sets. These value sets ensure consistency, accuracy, and standardization of the information entered. Once configured, the customized glossary fields function as additional metadata attributes during registration, enriching the catalog with meaningful business context.

Together, registration and the Business Glossary play a vital role in strengthening data governance by ensuring data is well-classified, secure, and aligned with business definitions and policies.



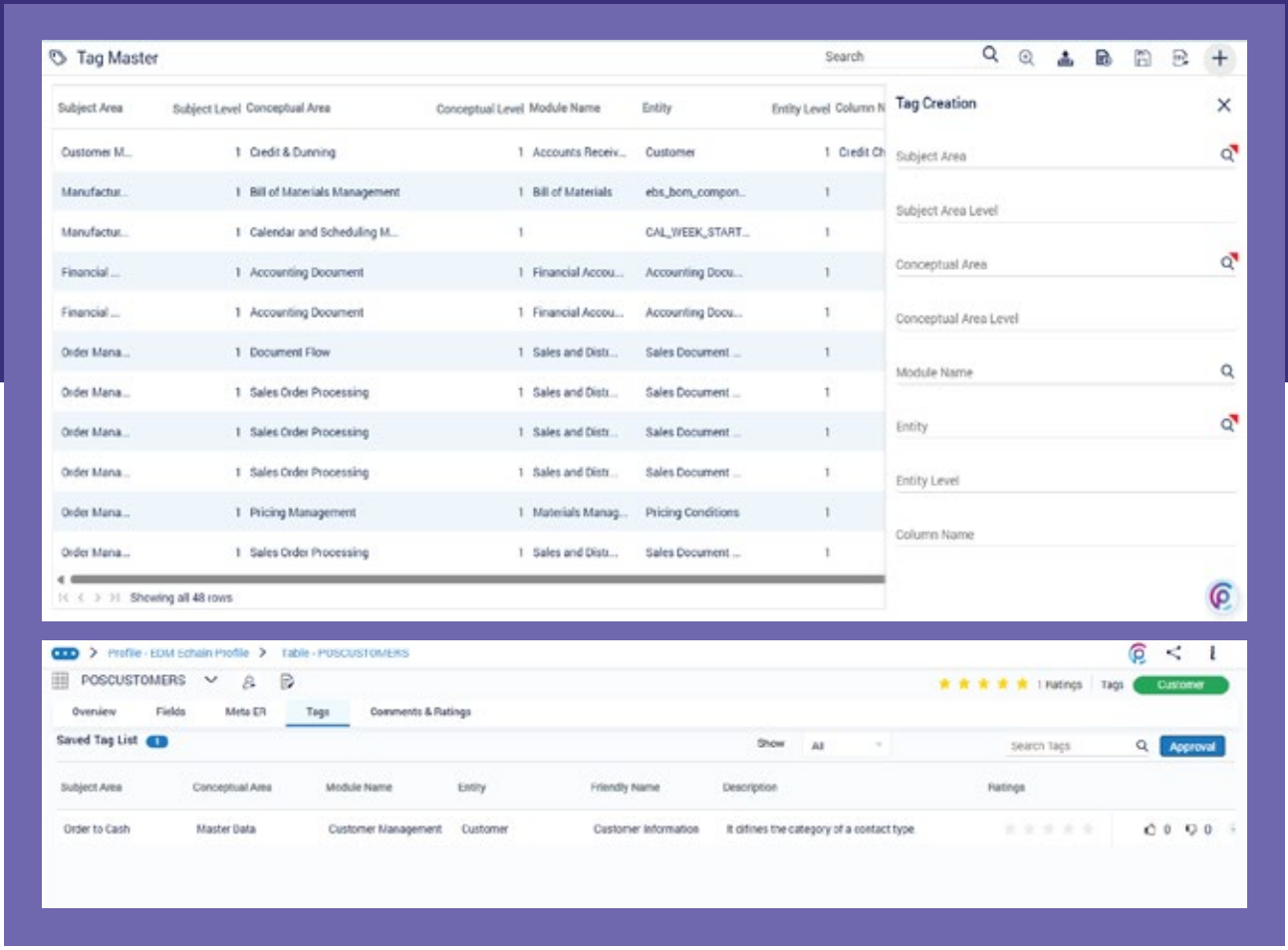
Step 3.2 Metadata Tagging

Tags are labels or keywords that help users quickly discover and identify relevant data within a catalog. By assigning tags to metadata fields, organizations can provide meaningful context that makes data easier to understand, search, and use effectively.

Tags enhance data accessibility by allowing users to locate related datasets based on common themes, business concepts, or technical attributes. They also support collaboration by enabling users to follow specific tags and stay informed about updates or changes to the associated data assets.

In addition to improving discoverability, tags play an important role in data governance. They help organize data consistently, promote shared understanding across teams, and simplify data management processes. By using tags strategically, organizations can ensure their data remains well-classified, accessible, and aligned with business objectives.

Metadata Tagging - A Product View



Step 3.3 Attribute & Relationship Mapping

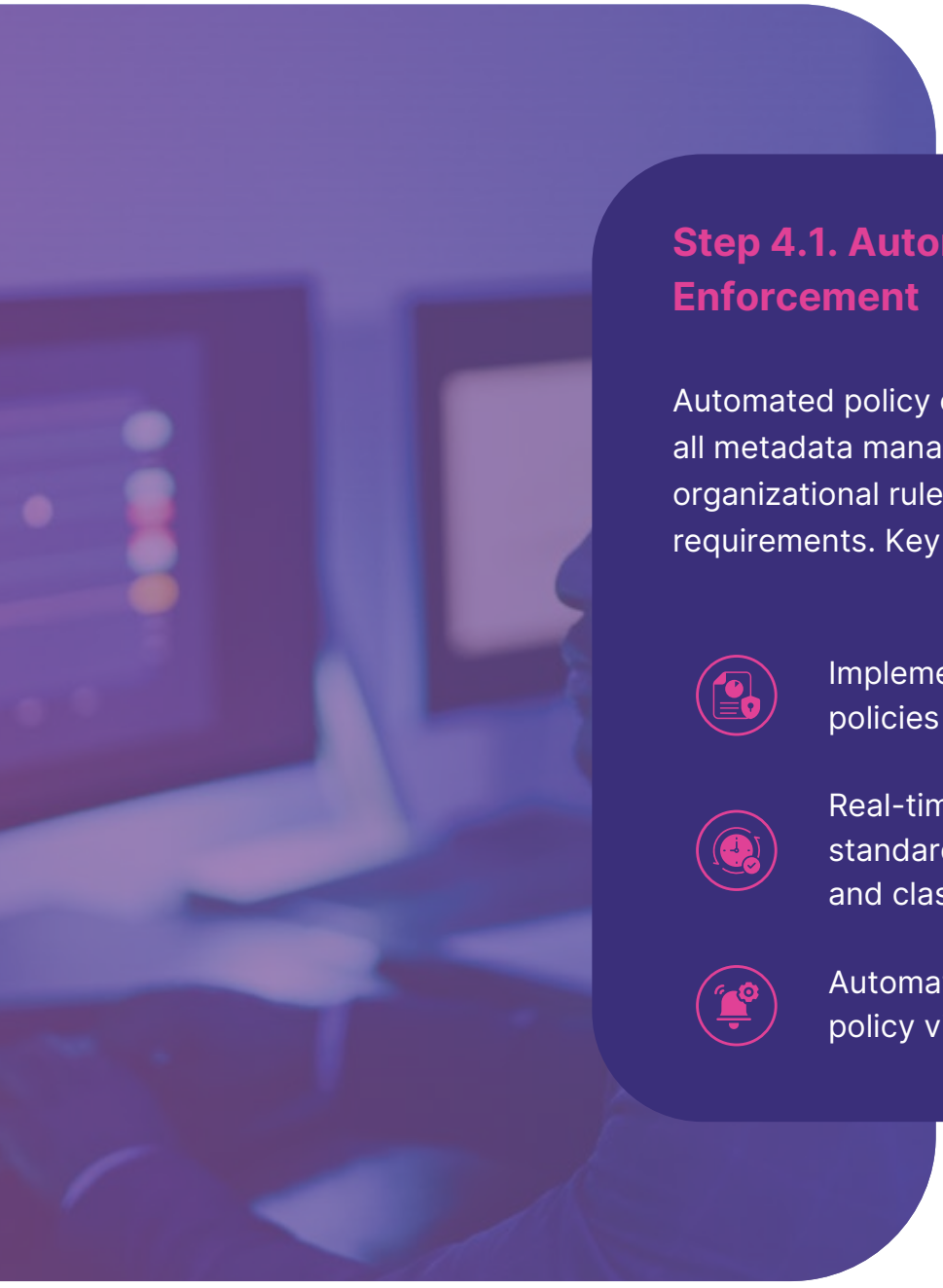
This step defines relationships between data elements across systems and domains. It connects related attributes, keys, and entities, revealing how data elements correspond and interact across applications. Relationship mapping supports cross-system consistency and domain-level understanding.

Step 3.4 Quality Metrics Integration

Quality metrics integration associates data quality rules, measurements, and scores directly with metadata. It embeds visibility into data accuracy, completeness, consistency, and timeliness at the attribute and dataset level, allowing quality insights to travel with the data.

Step 4: Governance, Security, and Compliance in Metadata Management

With enriched metadata in place, governance becomes actionable. Policies are automatically enforced, access controls are applied, and changes are tracked over time. This layer ensures compliance with internal standards and external regulations while continuously monitoring data usage, ownership, and accountability.



Step 4.1. Automated Policy Enforcement

Automated policy enforcement ensures that all metadata management activities adhere to organizational rules and regulatory requirements. Key features include:

- Implementation of predefined policies for data usage and access.
- Real-time enforcement of standards for data quality, lineage, and classification.
- Automatic alerts and actions when policy violations occur.

Step 4.2. Access Control and Role-Based Access (RBAC)

By enforcing access based on roles and responsibilities, RBAC ensures that users can access only the data relevant to their job functions, minimizing the risk of unauthorized access, data exposure, or misuse. This approach strengthens data governance, enhances compliance with security policies, and supports a principle

of least privilege across the metadata management platform. Roles such as Data Steward, Analyst, and Administrator are configured with specific access rights that determine what actions users can perform and what metadata they can view or manage. For example, data stewards may have permissions to curate and classify metadata, analysts may be granted read-only access for discovery and analysis, while administrators retain full control over system configuration and governance.

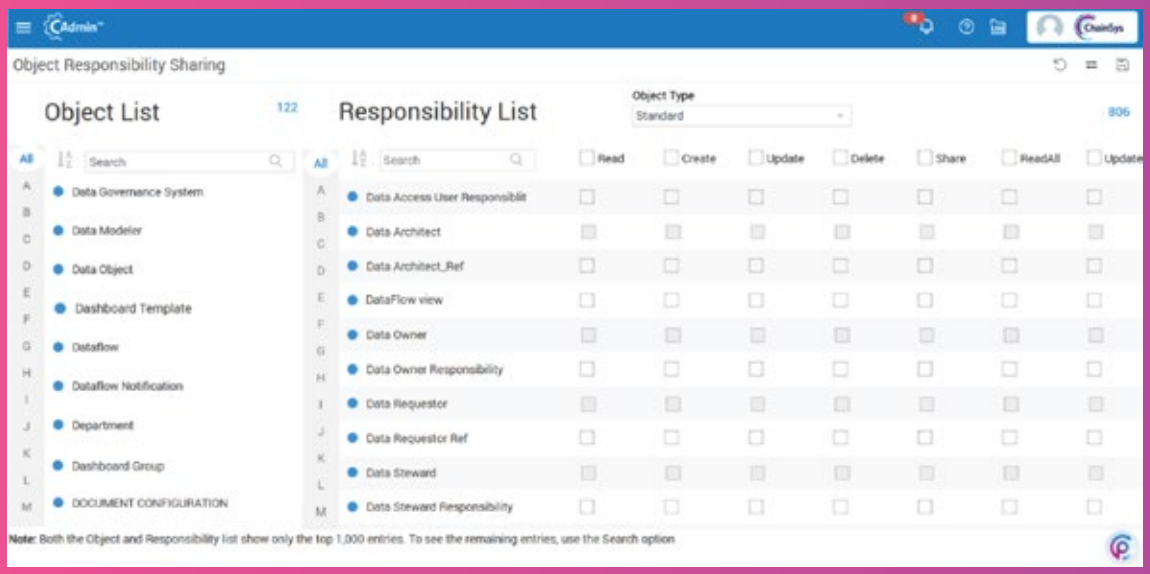
RBAC enables secure and controlled access to metadata based on user roles:

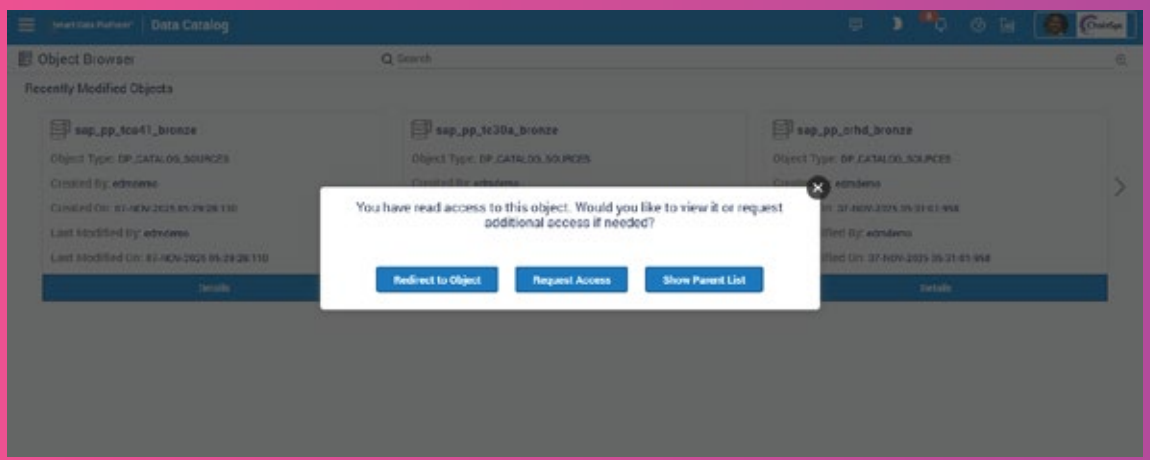
Assign roles such as Data Steward, Analyst, or Administrator with specific permissions.

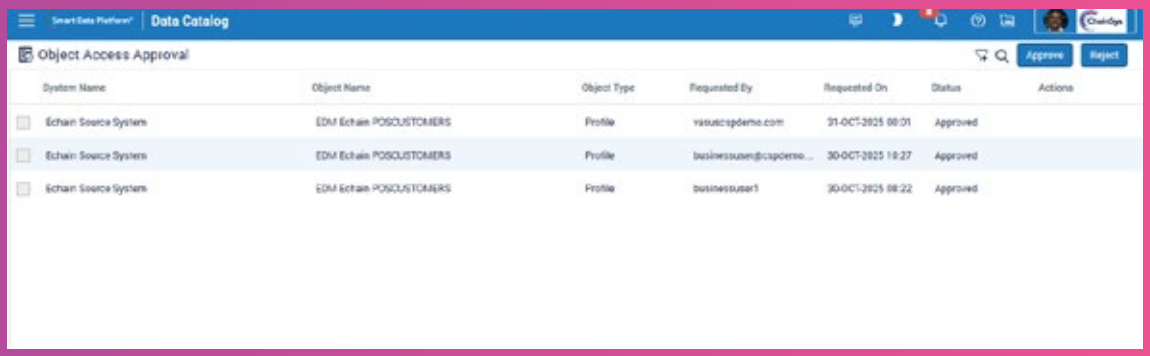
Control visibility of sensitive datasets and metadata objects.

Ensure users can access only the data relevant to their responsibilities, reducing security risks.

Access Control and Role-Based Access (RBAC) - A Product View

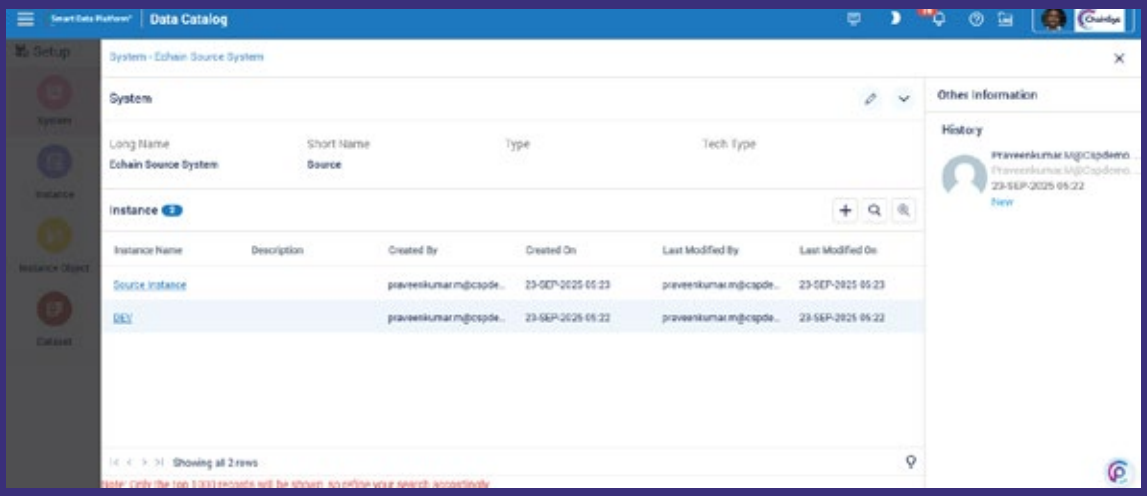






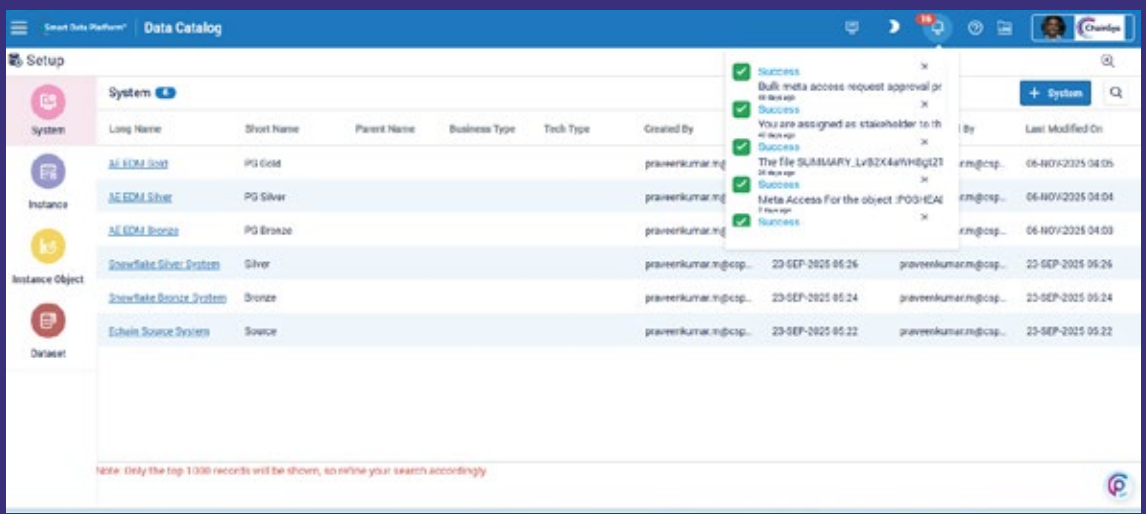
Step 4.3. Change Management

Change management tracks and controls modifications to metadata and related data assets:

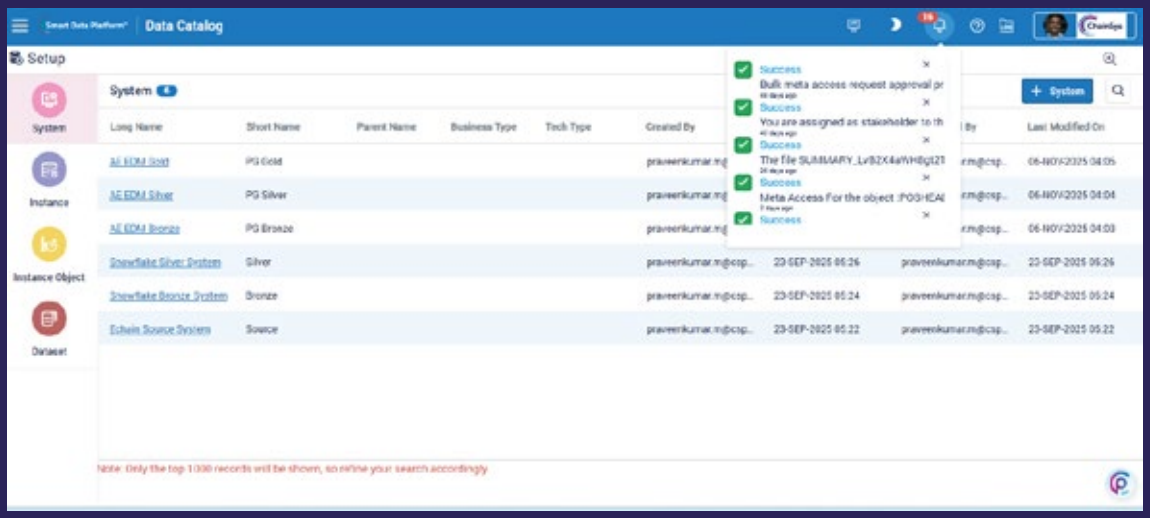


Maintains version history for audit and rollback purposes

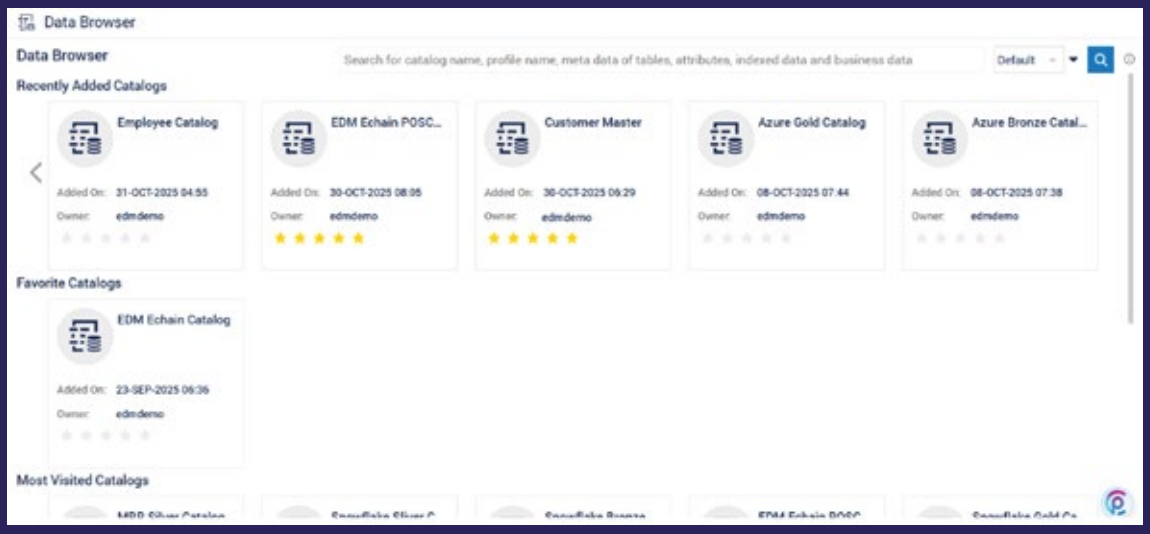
Maintains version history for audit and rollback purposes



Maintains version history for audit and rollback purposes.



Supports approval workflows and notifications to ensure controlled and transparent changes.



Step 4.4 Compliance Monitoring

Compliance monitoring continuously evaluates data assets and processes against regulatory and internal compliance requirements. It maintains audit trails, evidence, and compliance status, supporting ongoing regulatory adherence and audit readiness.

4.5 Data Operations

Step 4.4 Compliance Monitoring

Master data management uses metadata to define authoritative records, relationships, and governance rules for core business entities. It ensures consistency and alignment of master data across systems and operational processes.

4.5.2 Data Migration

Data migration leverages metadata and lineage to map source-to-target structures, validate transformations, and track dependencies. This enables controlled movement of data between systems while preserving accuracy and traceability.

4.5.3 Data Catalog

The data catalog presents curated metadata in a searchable, user-friendly interface. It enables users to discover, understand, and access data assets along with their definitions, lineage, and quality context.

4.5.4 Data Archival & Purging

Metadata-driven archival and purging identify data eligible for long-term storage or removal based on age, usage, and regulatory rules. This supports system performance, compliance, and cost optimization.

4.5.5 Data Quality Management

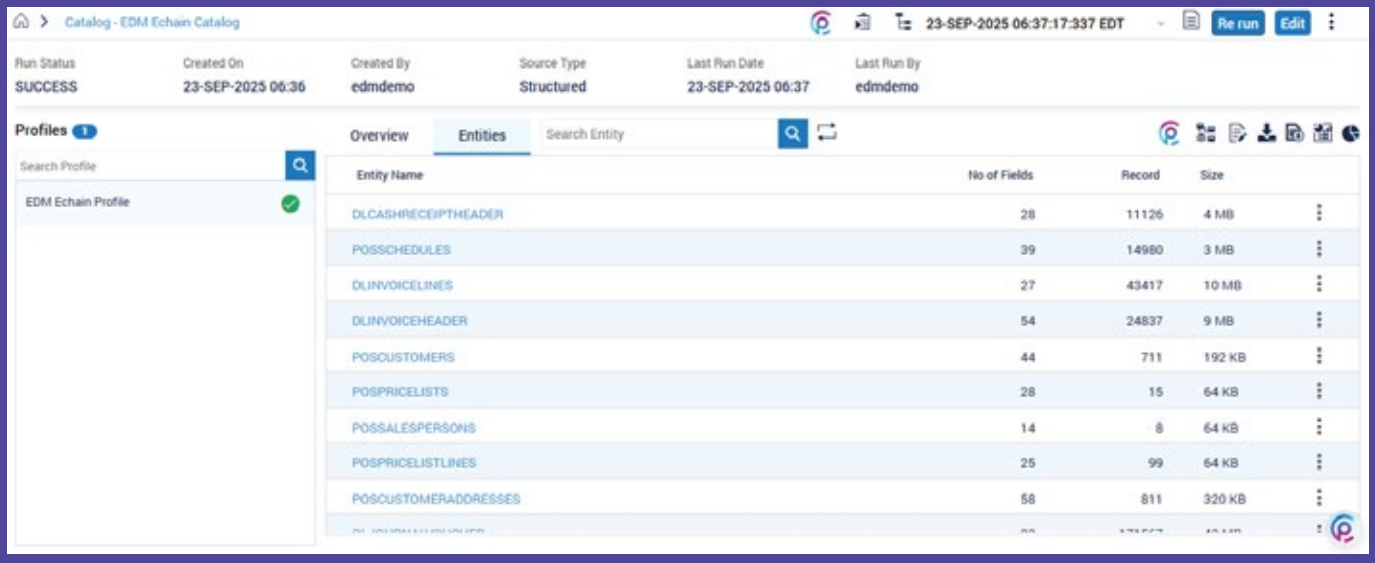
Data quality management uses metadata to define, monitor, and enforce quality rules across datasets. It tracks issues, trends, and remediation status, integrating quality control directly into data operations.

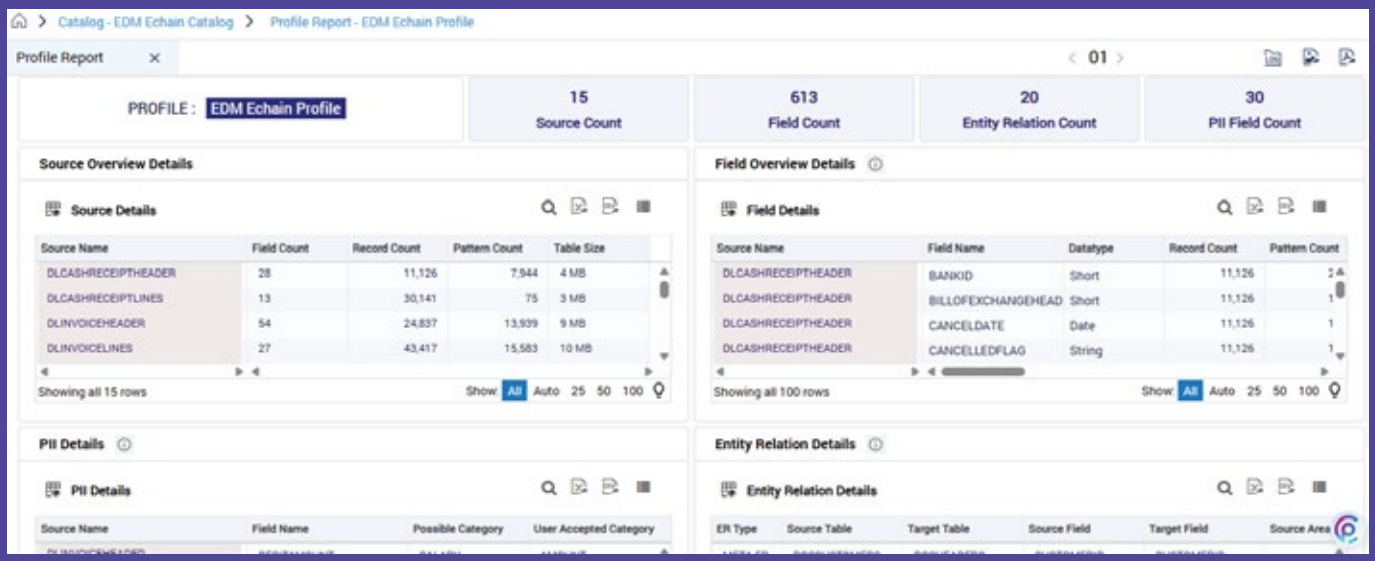
Chapter 5: Intelligence in Motion – Features that Define ChainSys AMM

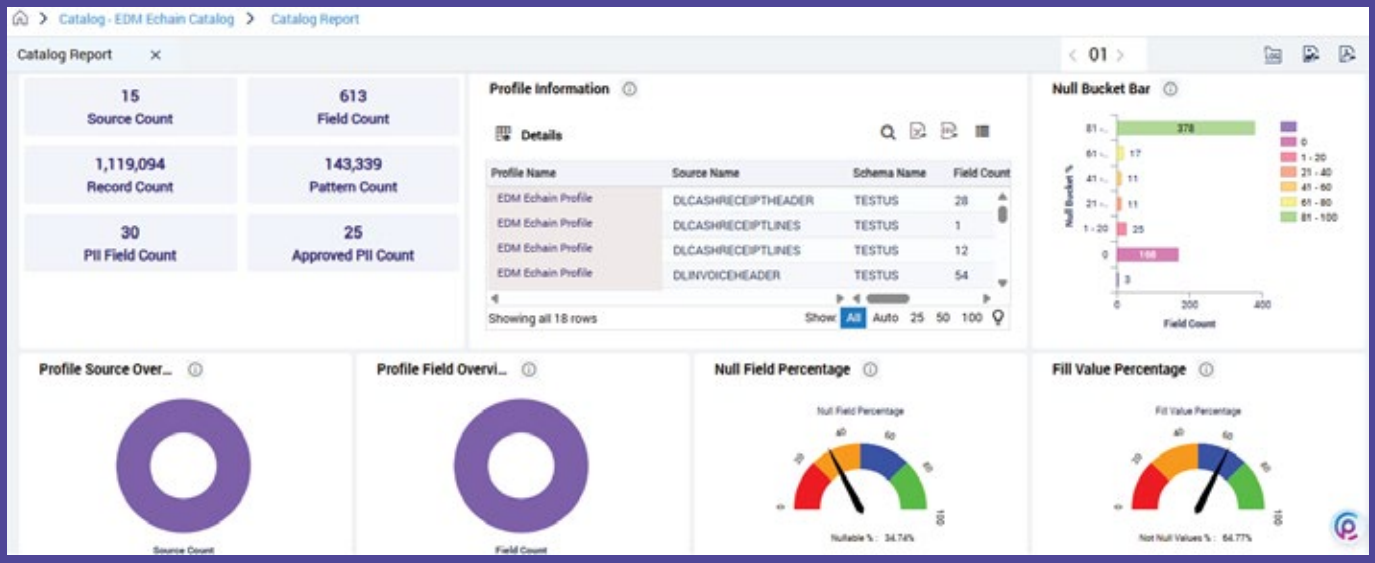
5.1 Continuous Metadata Harvesting

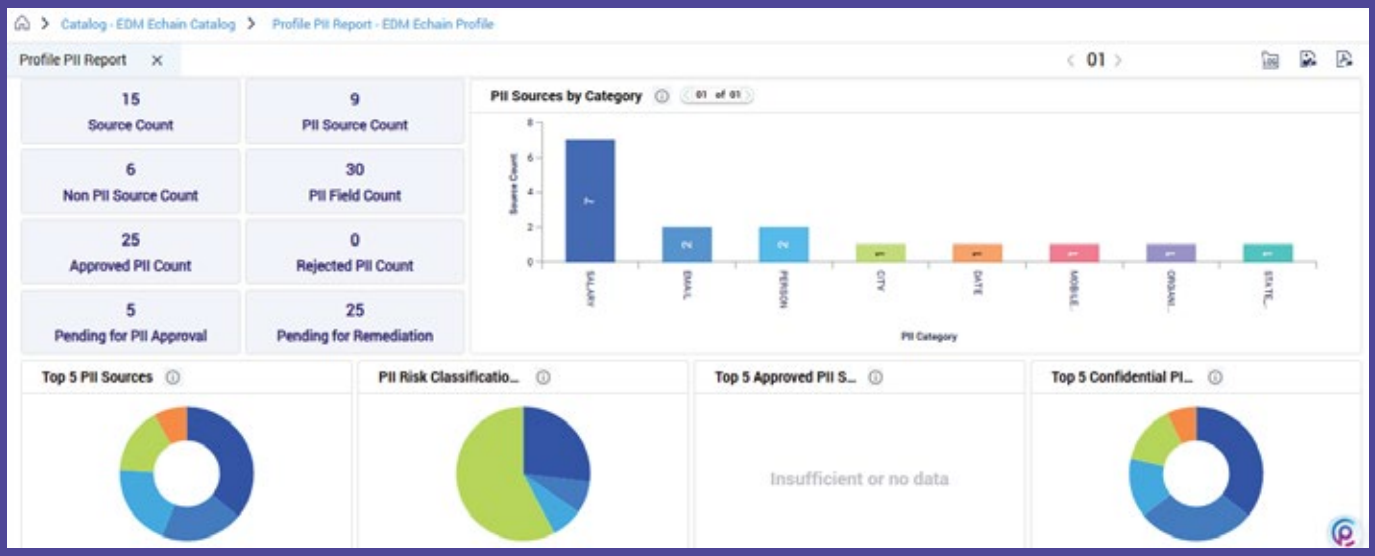
Continuous metadata harvesting automates the collection of metadata from multiple sources, including databases, cloud applications, and enterprise storage systems. It ensures that the metadata repository remains up-to-date, capturing incremental changes and new data assets. Scheduled harvesting and real-time updates help organizations maintain a comprehensive view of their data landscape.

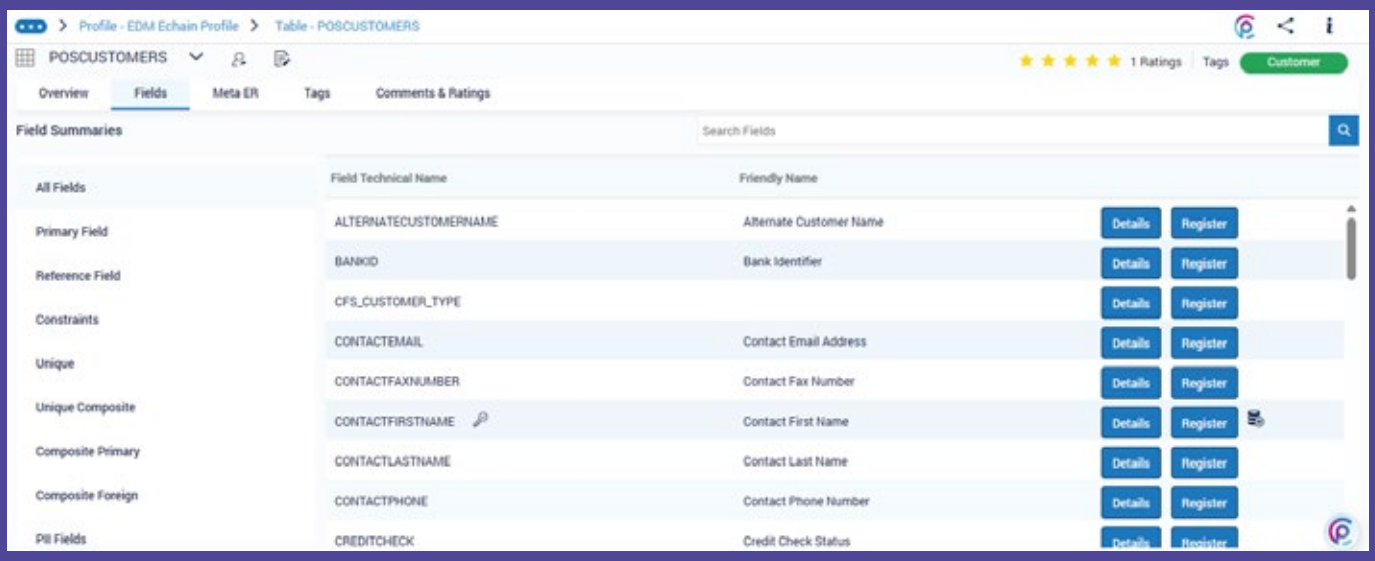
Continuous Metadata Harvesting - A Product View

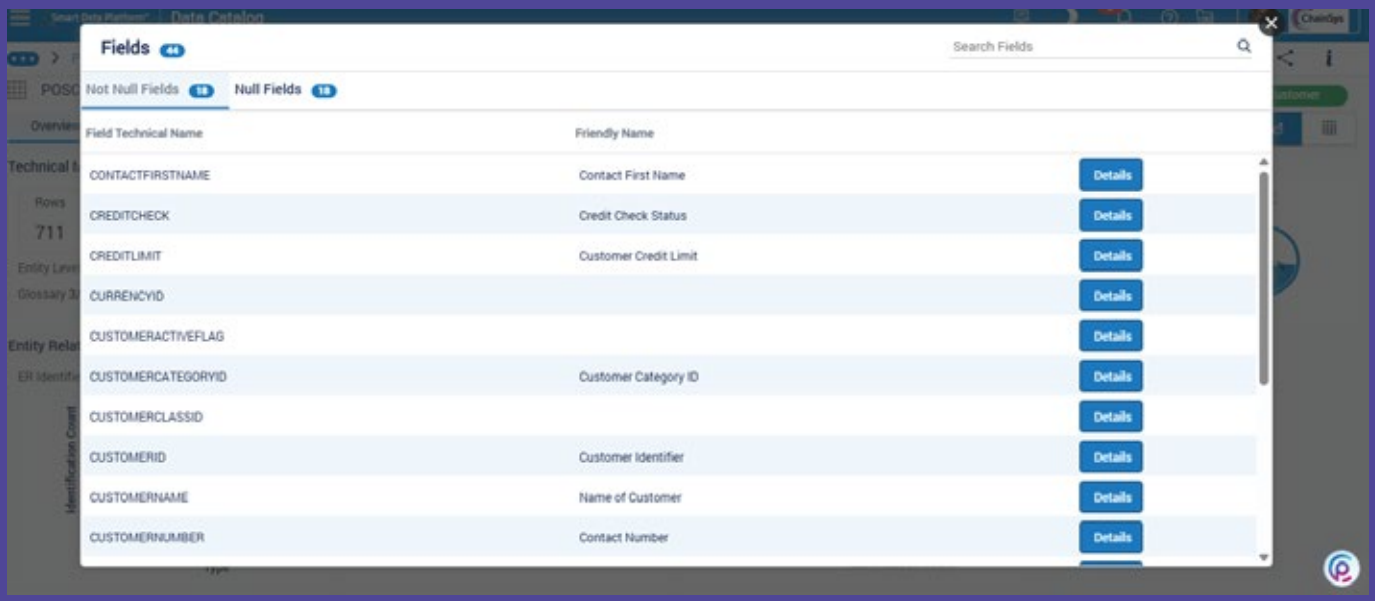





Catalog - EDM Echain Catalog
Catalog Report
Catalog Report
15
Source Count
613
Field Count
1,119,094
Record Count
143,339
Pattern Count
30
PII Field Count
25
Approved PII Count
Profile Information
Details
Profile Name
Source Name
Schema Name
Field Count
EDM Echain Profile
DLCASHRECEIPTHEADER
TESTUS
28
EDM Echain Profile
DLCASHRECEIPTLINES
TESTUS
1
EDM Echain Profile
DLCASHRECEIPTLINES
TESTUS
12
EDM Echain Profile
DLINVOICEHEADER
TESTUS
54
Showing all 18 rows
Null Bucket Bar
Profile Source Over...
Profile Field Overvi...
Null Field Percentage
Fill Value Percentage

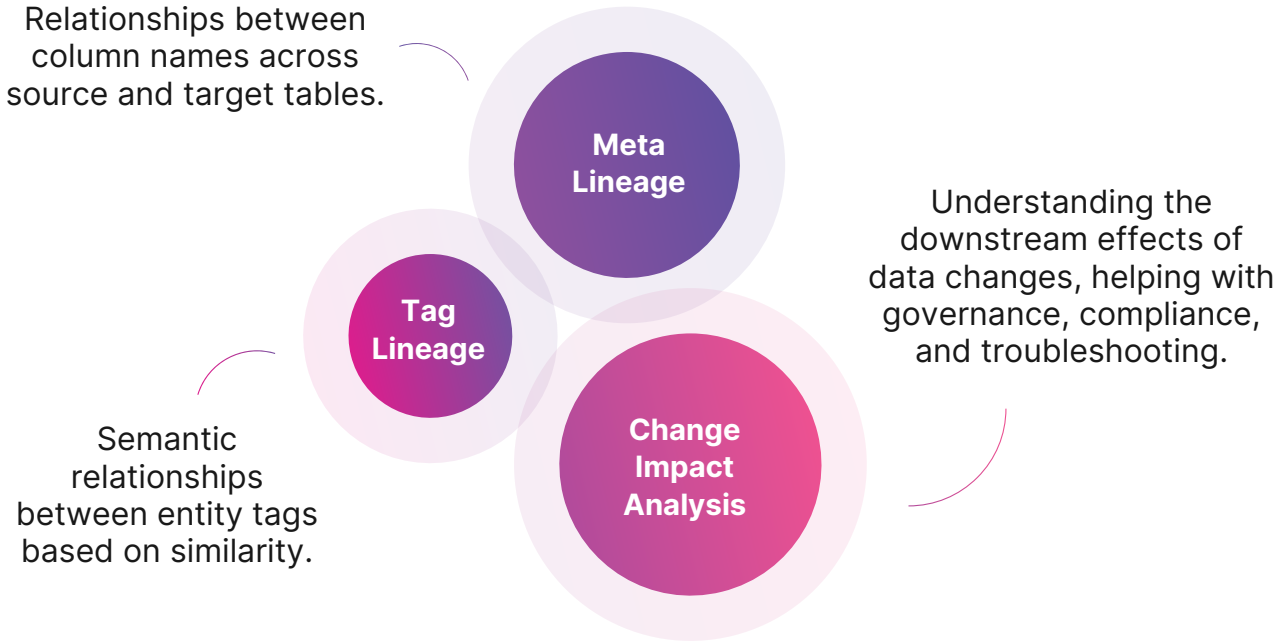

Catalog - EDM Echain Catalog
Profile PII Report - EDM Echain Profile
Profile PII Report
15
Source Count
9
PII Source Count
6
Non PII Source Count
30
PII Field Count
25
Approved PII Count
0
Rejected PII Count
5
Pending for PII Approval
25
Pending for Remediation
PII Sources by Category
Source Count
PII Category
Top 5 PII Sources
PII Risk Classificatio...
Top 5 Approved PII S...
Insufficient or no data
Top 5 Confidential PI...


Profile - EDM Echain Profile
Table - POSCUSTOMERS
POSCUSTOMERS
1 Ratings
Tags
Customer
Overview
Fields
Meta ER
Tags
Comments & Ratings
Field Summaries
Search Fields
All Fields
Primary Field
Reference Field
Constraints
Unique
Unique Composite
Composite Primary
Composite Foreign
PII Fields
Field Technical Name
Friendly Name
ALTERNATECUSTOMERNAME
Alternate Customer Name
BANKID
Bank Identifier
CFS_CUSTOMER_TYPE
CONTACTEMAIL
Contact Email Address
CONTACTFAXNUMBER
Contact Fax Number
CONTACTFIRSTNAME
Contact First Name
CONTACTLASTNAME
Contact Last Name
CONTACTPHONE
Contact Phone Number
CREDITCHECK
Credit Check Status
Details
Register

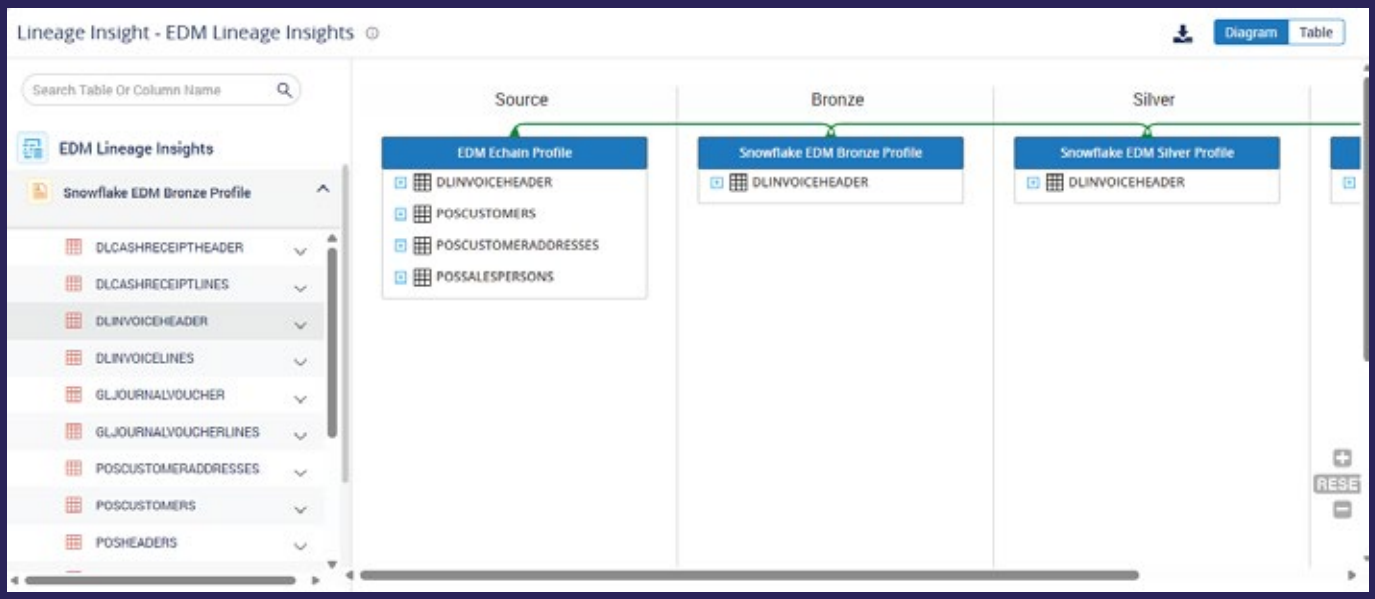


5.2 Real-Time Data Lineage Visualization

Real-time data lineage visualization enables tracking of data flow and transformations across systems. It provides:



Real-Time Data Lineage Visualization - A Product View

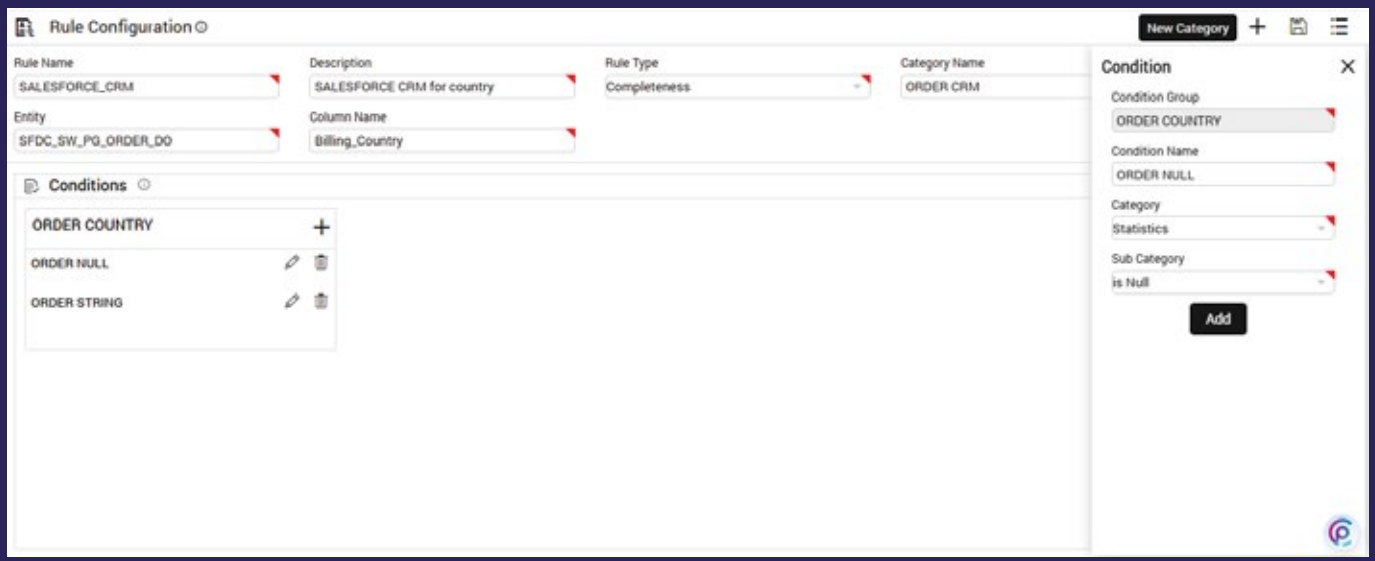


5.3 Metadata Quality and Validation

Automated metadata quality checks ensure data integrity and consistency. This includes:

- Rules and standards for validating metadata completeness and accuracy.
- Detection of anomalies or inconsistencies in datasets.
- Integration with profiling insights to identify issues proactively.

Metadata Quality and Validation - A Product View



Profile Output Report

Schema Details

Scheme Name	: bi_analytics		
Host	: 192.168.57.70	Port	: 5432
DataBase Type	: POSTGRESQL		

Table Details

Entity	: Payment fact test		
No of Columns	: 49	No of Rows	: 1000

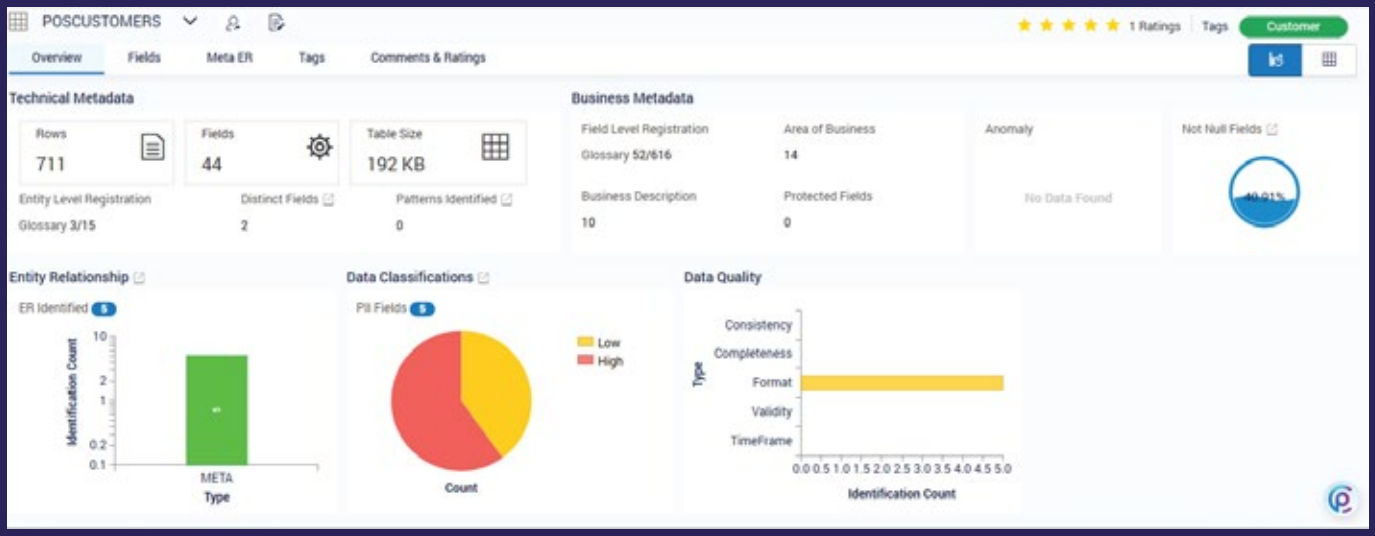
Anomaly Data Report

Anomaly Percentage	: 7%	Non Anomaly Percentage	: 93%

Constraints Details

Column Name	Description	Not Null	Null	Empty	Contain Zero Values	Unique	Primary	Reference	Constant
accts_pay_code_combination_id	accts_pay_code_combination_id								
address_line1	address_line1								
aging_classification	aging_classification								
amount	amount								
amount_paid	amount_paid								
amount_remaining	amount_remaining								
attribute7	attribute7								
attribute8	attribute8								
avg_invoice_amount	avg_invoice_amount								
city	city								
country	country								
creation_date	creation_date								

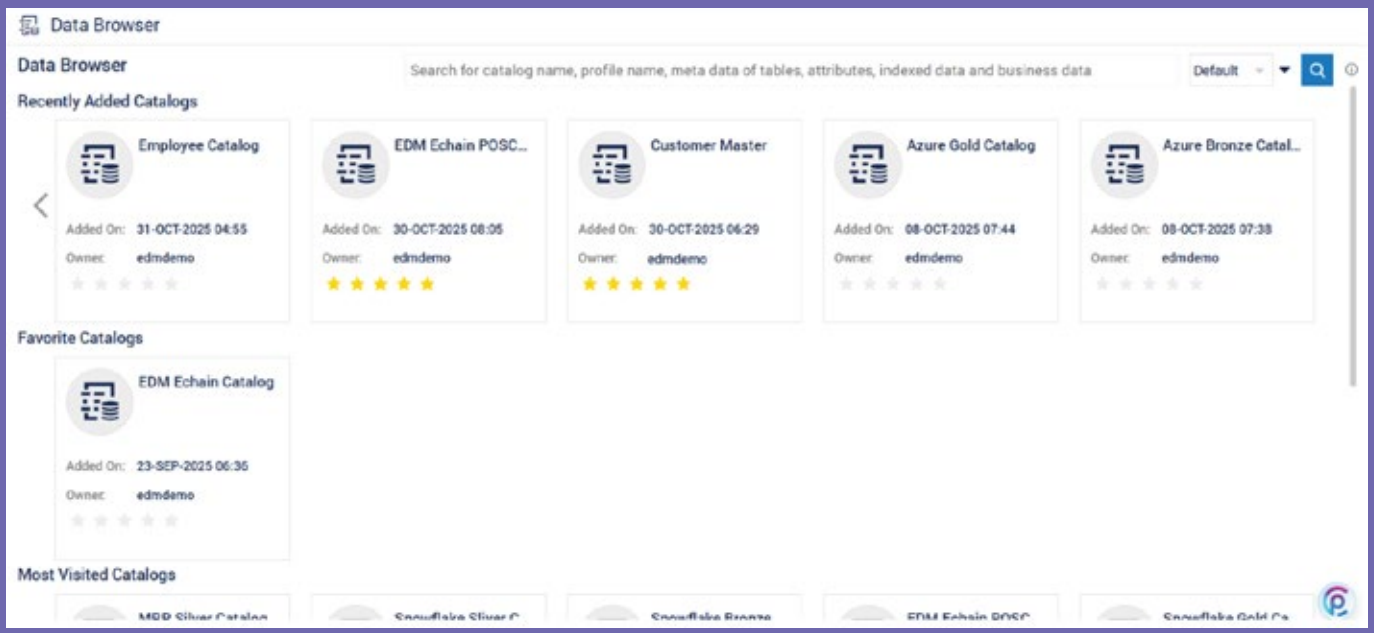
Page 1



5.4 Metadata-Driven Data Discovery

The data browser is a comprehensive search tool designed to locate any object, including catalogs, profiles, tables, and metadata details. By using tags and the business glossary integrated within the catalog, it streamlines the search process. This functionality allows users to efficiently navigate the extensive data repository and quickly retrieve relevant information from the Solr database.

Metadata-Driven Data Discovery - A Product View



5.5 Dynamic Access Control and Role-Based Visibility

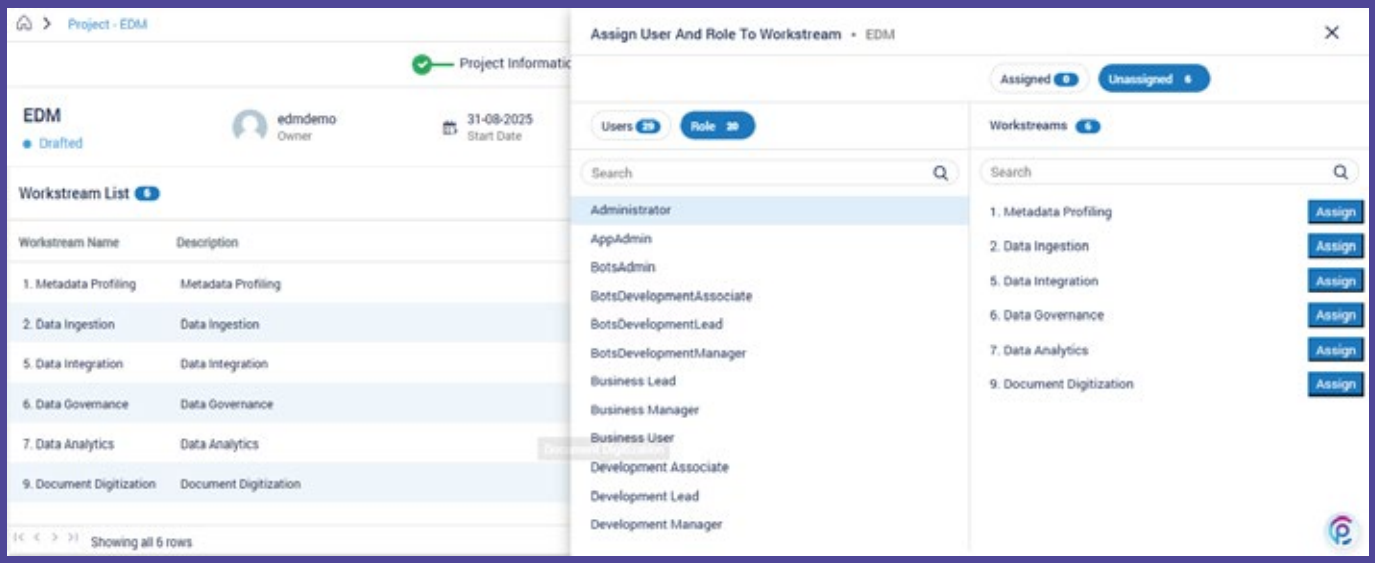
Metadata Security and Governance

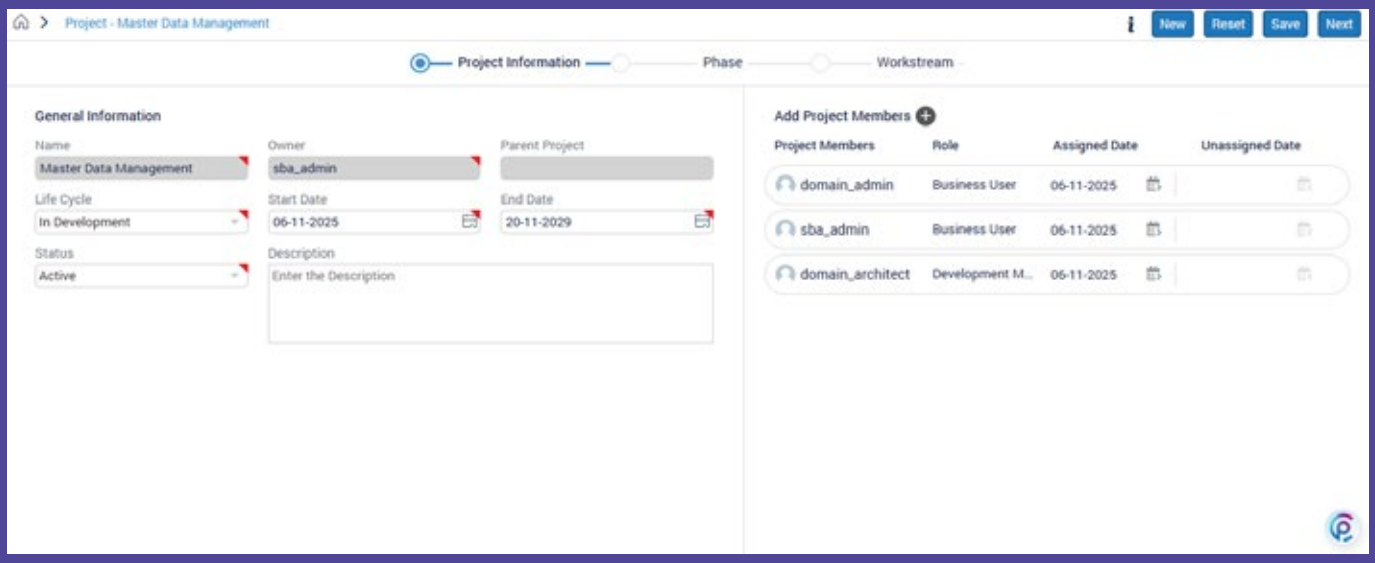
- Effective metadata management goes beyond organizing and cataloging data—it also requires robust security, controlled access, and governance mechanisms to protect sensitive information, ensure compliance, and maintain trust in the organization's data assets.

Role-Based Access Management

- Stakeholder Assignment defines the ownership hierarchy for a created system, ensuring clear accountability and governance. The process designates a System Owner, who holds primary responsibility for the system.
- Only users with System Owner privileges can be assigned as a System Owner.
- The designated System Owner has the authority to assign Data Owners and Data Stewards, ensuring proper delegation and management of data responsibilities.
- This structured assignment ensures that roles are clearly defined, promoting accountability, compliance, and efficient metadata governance.
- By enforcing role-based assignments, Stakeholder Assignment ensures that responsibilities are appropriately distributed and that the system's metadata and data assets are effectively managed.
- Role-Based Access Control (RBAC) ensures that users can access only the metadata and functions necessary for their responsibilities. By defining roles such as System Owner, Data Owner, Data Steward, and Analyst, organizations can enforce a principle of least privilege. This prevents unauthorized access, reduces security risks, and ensures that sensitive metadata is handled appropriately by the right stakeholders.

Role-Based Access Management - A Product View

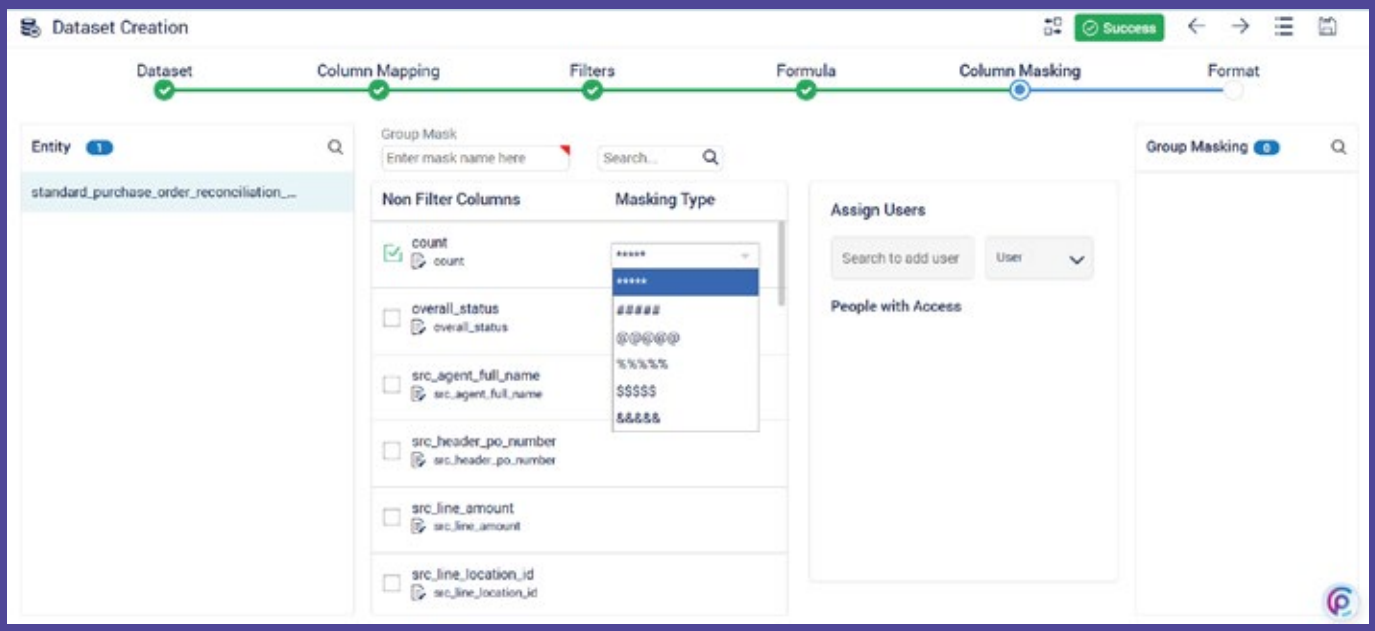




Data Masking and Security Policies

- Sensitive metadata, such as personally identifiable information (PII) or proprietary business data, must be protected from exposure. Data masking techniques and security policies ensure that restricted data is hidden from unauthorized users while remaining usable for permitted operations. These policies can include encryption, conditional masking, or role-based visibility, safeguarding both compliance and operational integrity.

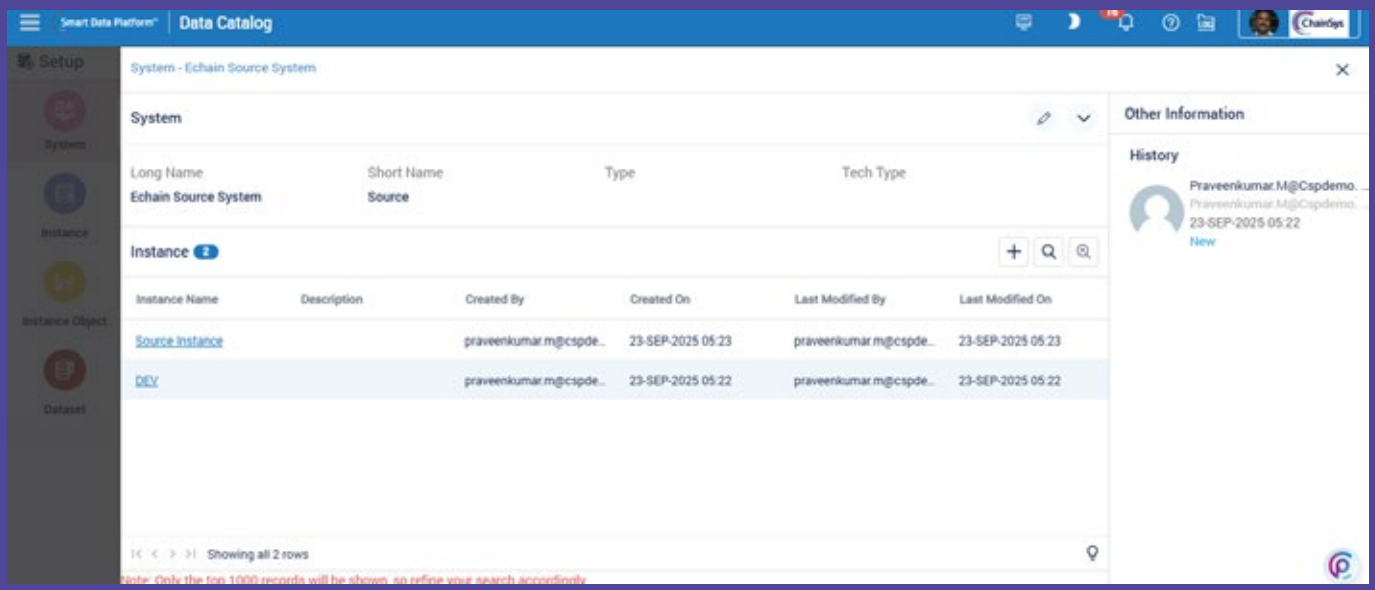
Data Masking and Security Policies - A Product View



Auditing and Change Tracking

- Maintaining a comprehensive audit trail is critical for governance and regulatory compliance. Every change to metadata—whether creation, modification, approval, or deletion—is logged with details such as the user, timestamp, and type of change. This not only supports accountability but also enables organizations to track the evolution of metadata, perform impact analyses, and roll back changes if needed. Auditing also helps meet regulatory requirements for data handling, reporting, and compliance.

Auditing and Change Tracking - A Product View



Benefits

By integrating RBAC, data masking, and auditing:

- Organizations can control who sees and modifies metadata, reducing the risk of accidental or malicious exposure.
- Compliance with data protection regulations such as GDPR, CCPA, or internal governance policies is streamlined and auditable.
- Teams can collaborate securely, knowing that sensitive information is protected and that all actions are tracked.
- In combination, these security and governance practices ensure that metadata remains trustworthy, secure, and compliant, enabling effective collaboration and informed decision-making across the enterprise.

5.6 Metadata Collaboration and Workflow Management

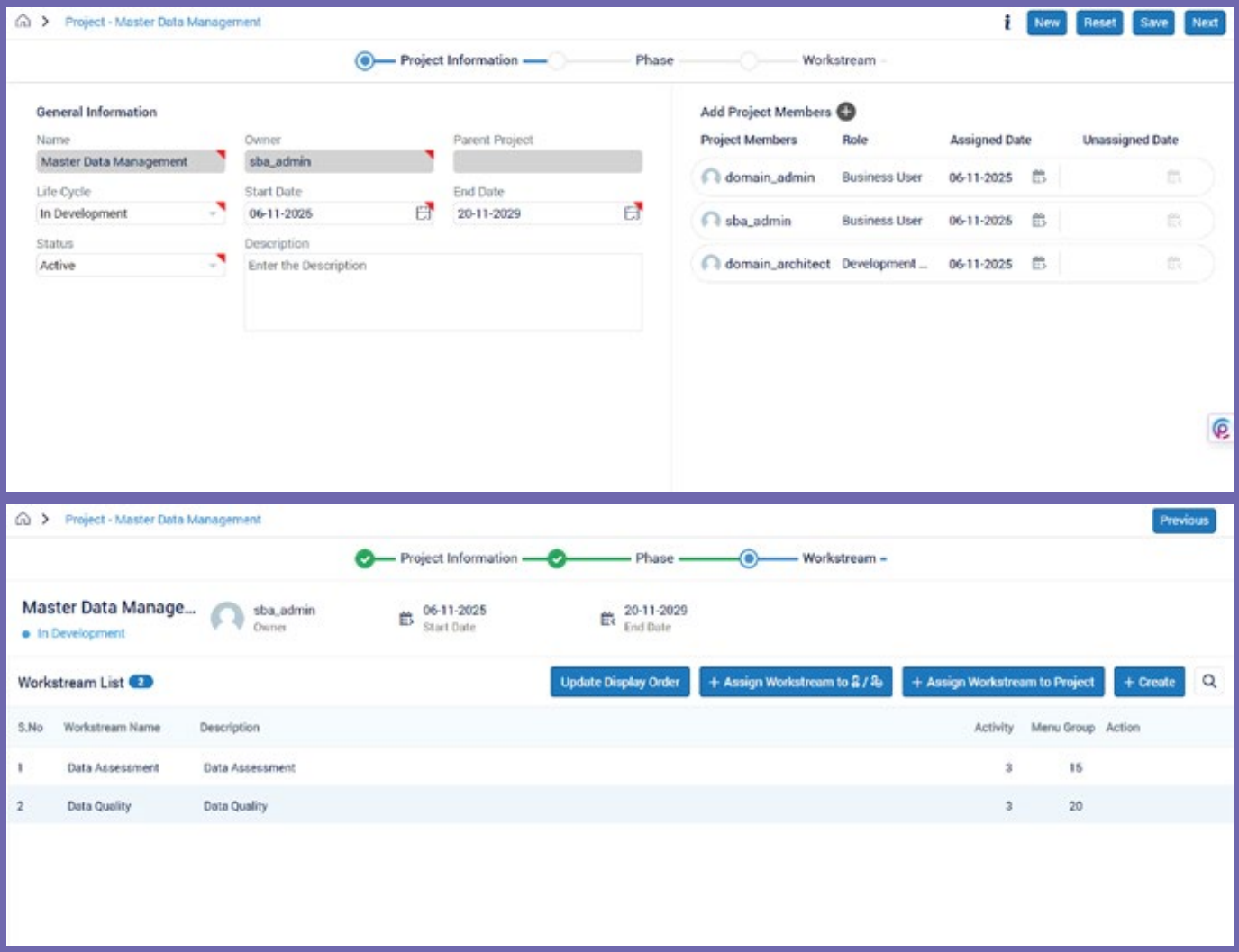
Effective metadata management requires strong collaboration, clear ownership, and well-defined workflows. Metadata Collaboration and Workflow Management provide a structured framework that enables teams to work together efficiently while maintaining governance, transparency, and control across the metadata lifecycle.

At the core of this framework is the Project, which acts as a centralized workspace representing a complete business or technical data initiative. A Project brings together all metadata and ETL-related activities—such as configuration, transformation, execution, monitoring, and validation—into a single, cohesive workflow. This approach simplifies complex initiatives by organizing them into logical, goal-driven structures that are easy to understand and manage.

Within each Project, Workstreams define distinct phases or functional areas of work, such as data integration, migration, or transformation. Workstreams provide role-based views, contextual menus, and guided activities that help users focus on their specific responsibilities. By presenting only relevant tasks and information, Workstreams reduce complexity and enable users to move through the process with confidence and clarity.

To further streamline execution, Initiatives are used within Workstreams to manage specific objectives or milestones. This layered structure—Project, Workstream, and Initiative—ensures alignment between day-to-day tasks and broader business goals, while offering full visibility into progress and dependencies.

Metadata Collaboration - A Product View



Streamlining Approvals and Assignments

Collaboration is strengthened through built-in governance capabilities, including approval workflows for metadata updates, version control, and automated notifications. These features ensure that changes are reviewed, tracked, and communicated effectively, reducing risk and maintaining data integrity. By enabling seamless teamwork between metadata managers, analysts, and IT teams, this framework supports controlled, transparent, and scalable metadata operations across the enterprise.

The Approval Workbench is a centralized feature designed to provide comprehensive visibility and control over metadata governance processes. It offers critical insights into the status of tags, relationships, access requests, and object ownership, helping organizations track approvals and assignments efficiently.

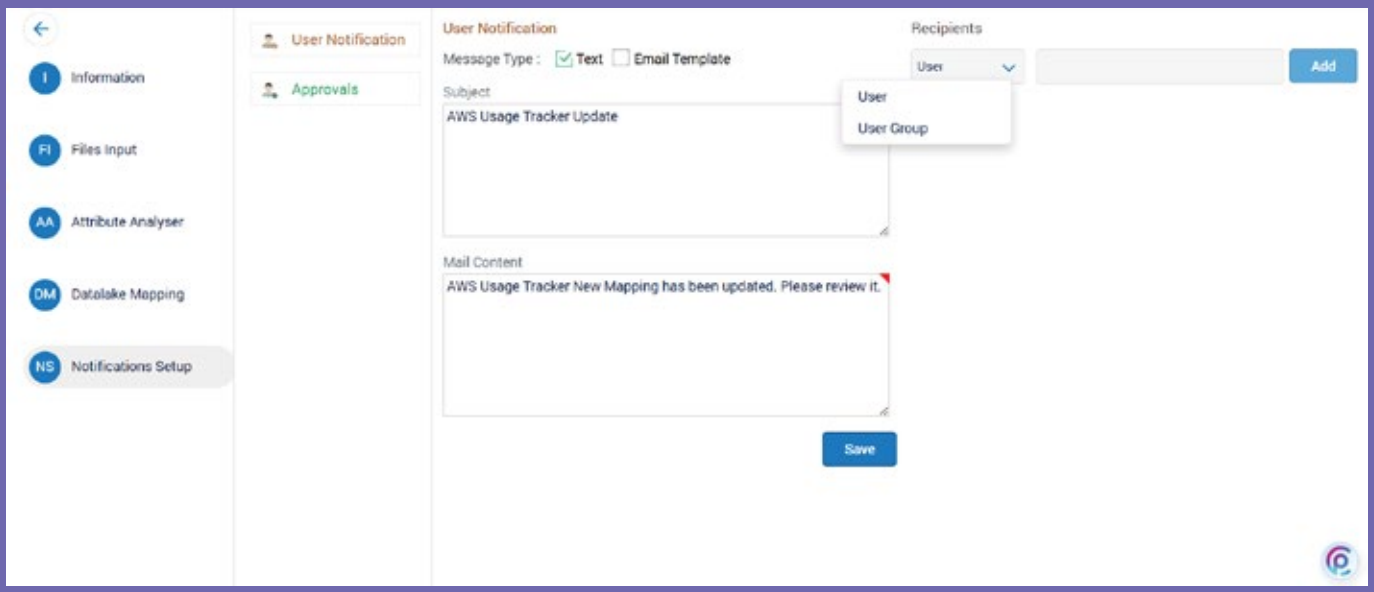
Displays percentages for approved, pending, and rejected items, giving a clear overview of the current approval status.

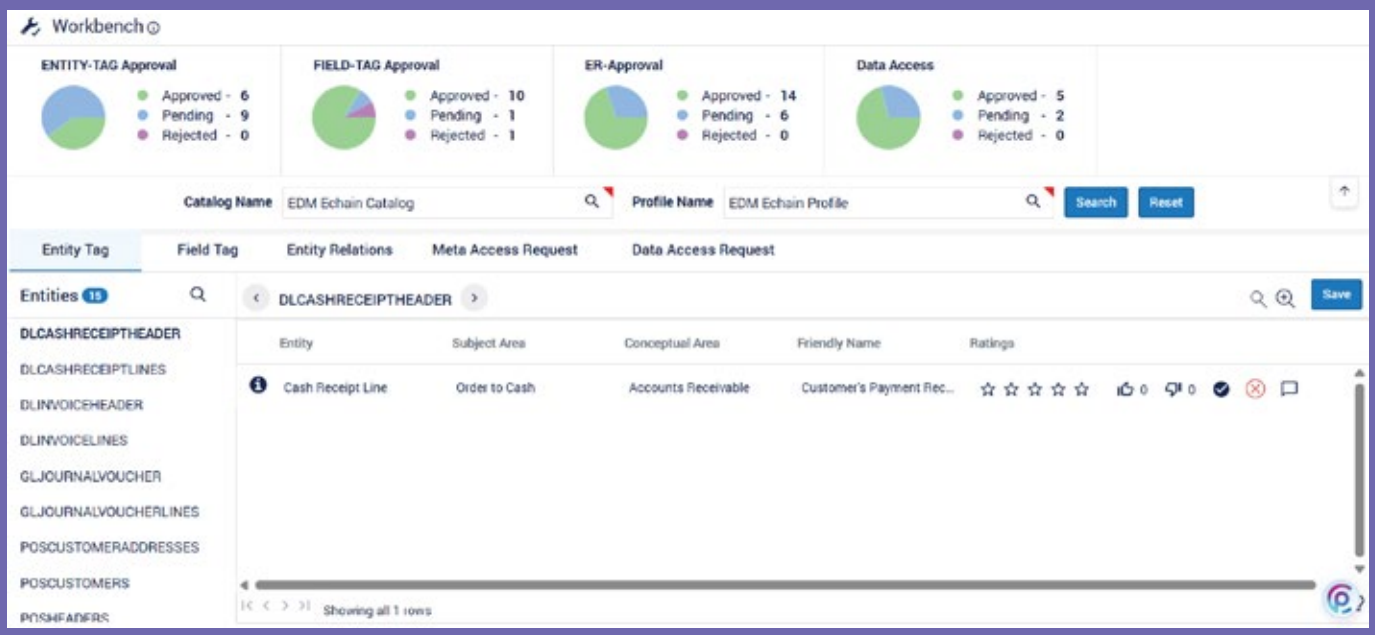
Shows assigned and unassigned percentages for object ownership, ensuring that every data asset is properly accounted for.

Combines multiple approval processes and owner assignments into a single interface, enabling streamlined management and oversight.

By centralizing approvals and ownership assignments, the Approval Workbench ensures that all necessary approvals are obtained and that metadata objects are assigned to the appropriate owners. This functionality strengthens governance, promotes accountability, and improves operational efficiency across data initiatives.

Approval Workbench - A Product View

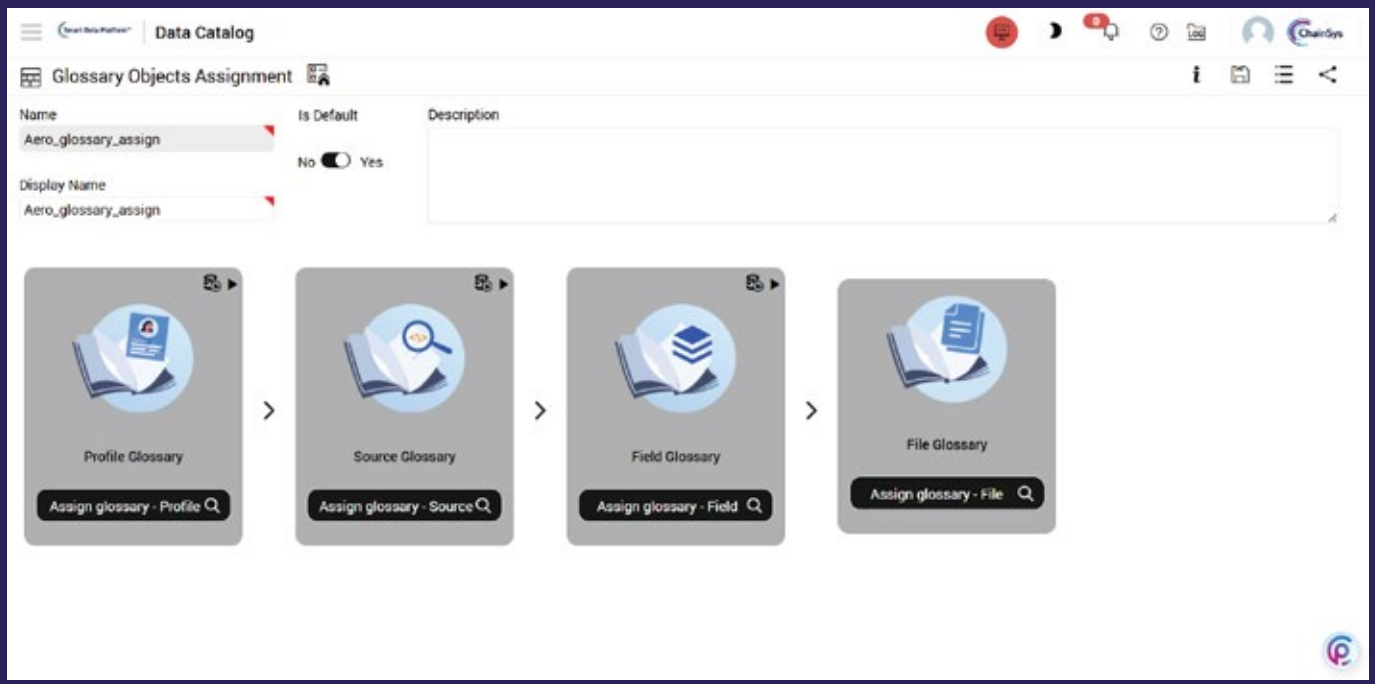




5.7 Metadata Enrichment and Integration

Metadata can be enriched and integrated with external resources:

- Integration with external glossaries, catalogs, and knowledge bases.
- Enrichment using AI models or external datasets to add context and business relevance.
- Linking metadata to business processes and operational systems.



5.8 Insights Dashboard: Metadata Health, Compliance, and

The Execution Summary provides a high-level overview of the execution status of the entire catalog, encompassing all four key steps in the workflow. It displays completion percentages for each step as well as the overall progress, giving users a clear snapshot of the catalog's execution status at a glance.

The summary section enables stakeholders to:

Track Progress:

See how much of each step has been completed and identify any pending tasks.

Monitor Workflow Health:

Quickly assess the overall execution status of the catalog to ensure processes are on track.

Support Decision-Making:

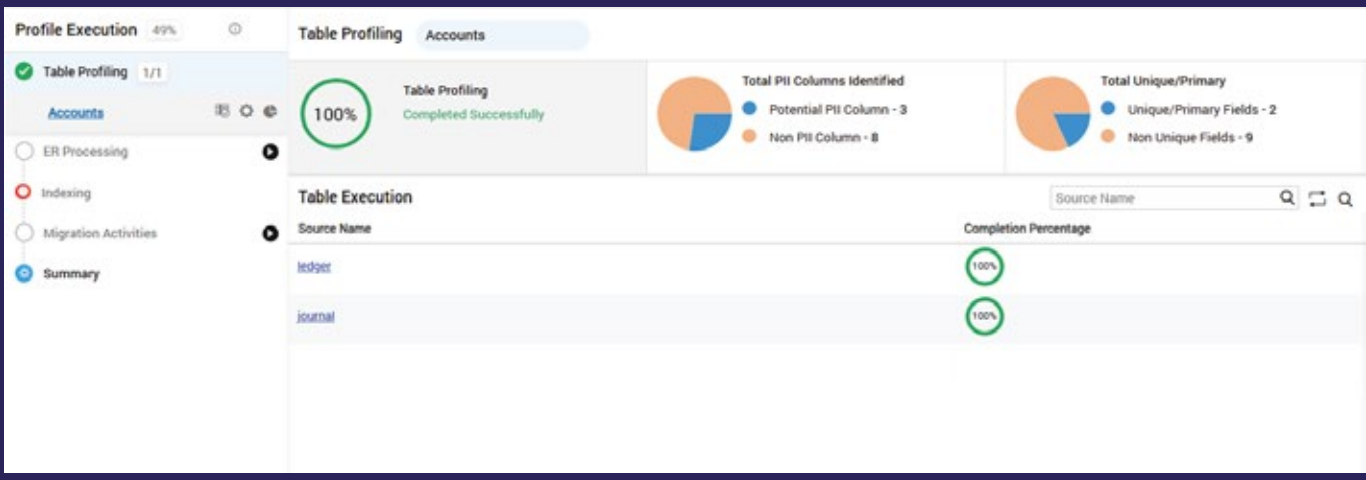
Use completion metrics to prioritize actions, allocate resources, or address bottlenecks efficiently.

The Profile Report summarizes the outcomes of profiled data for a selected profile, presenting the results in an intuitive dashboard with tables and charts. These visualizations help users quickly understand data quality, patterns, and distribution across the dataset.

In addition, specialized dashboards such as Entity Reports and PII (Personally Identifiable Information) Reports provide focused insights:

Entity Reports
Highlight relationships, classifications, and attributes of data entities.

PII Reports
Identify and track sensitive data to ensure compliance with privacy and regulatory requirements.



Charts and graphical elements in these dashboards make complex data easier to interpret, enabling teams to:

- Detect anomalies, inconsistencies, or gaps in the data.
- Monitor sensitive data handling for governance and compliance.
- Take informed actions to improve data quality and operational efficiency.

By consolidating profiling results into interactive, visual dashboards, these reports turn raw metadata into actionable insights for data stewards, analysts, and governance teams.

Chapter 6: ChainSys Implementation Framework

6.1. Discovery & Assessment - Understanding What You Have Before You Organize It

The journey begins with visibility. ChainSys connects to your enterprise systems, cloud, on-premises, hybrid, and auto-discovers metadata, data relationships, and data quality insights. This includes structured and unstructured data across applications, data warehouses, and file systems.

This phase also includes stakeholder interviews and current-state analysis to ensure we align with your business context and regulatory needs.

Outcome

A clear map of your data ecosystem and a strategic implementation plan for the active metadata management solution.

6.2. Proof of Value (PoV) - Showcasing Tangible Results with Your Real Data

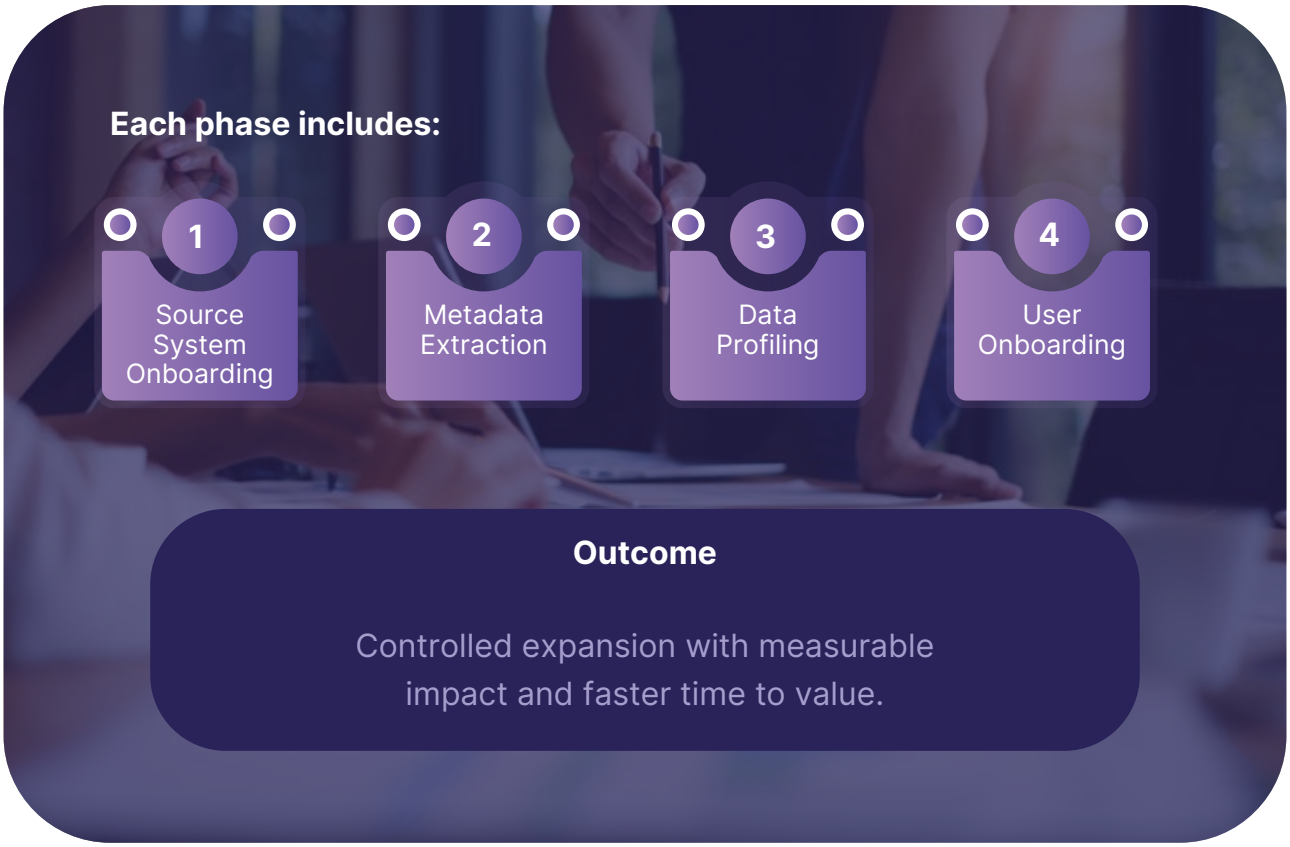
Before rolling out across the enterprise, we deliver a focused Proof of Value (PoV) using a subset of your data sources. This ensures stakeholders can experience dataZense capabilities firsthand, searching metadata, viewing lineage, evaluating data quality, and navigating the business glossary.

Outcome

Accelerated buy-in from business and IT, and a clear demonstration of ROI potential.

6.3. Phased Rollout Strategy - Scaling Smartly with Agility and Impact

A big-bang rollout can cause disruption. Instead, we adopt a phased approach, beginning with high-impact domains or business units. We scale in waves, reusing configurations, templates, and learnings from the PoV.



6.4. Change Management & Training - Driving Adoption Through Empowerment and Enablement

Technology success depends on user adoption. ChainSys offers robust change management, user enablement, and communications support to help your teams embrace the metadata.

We provide

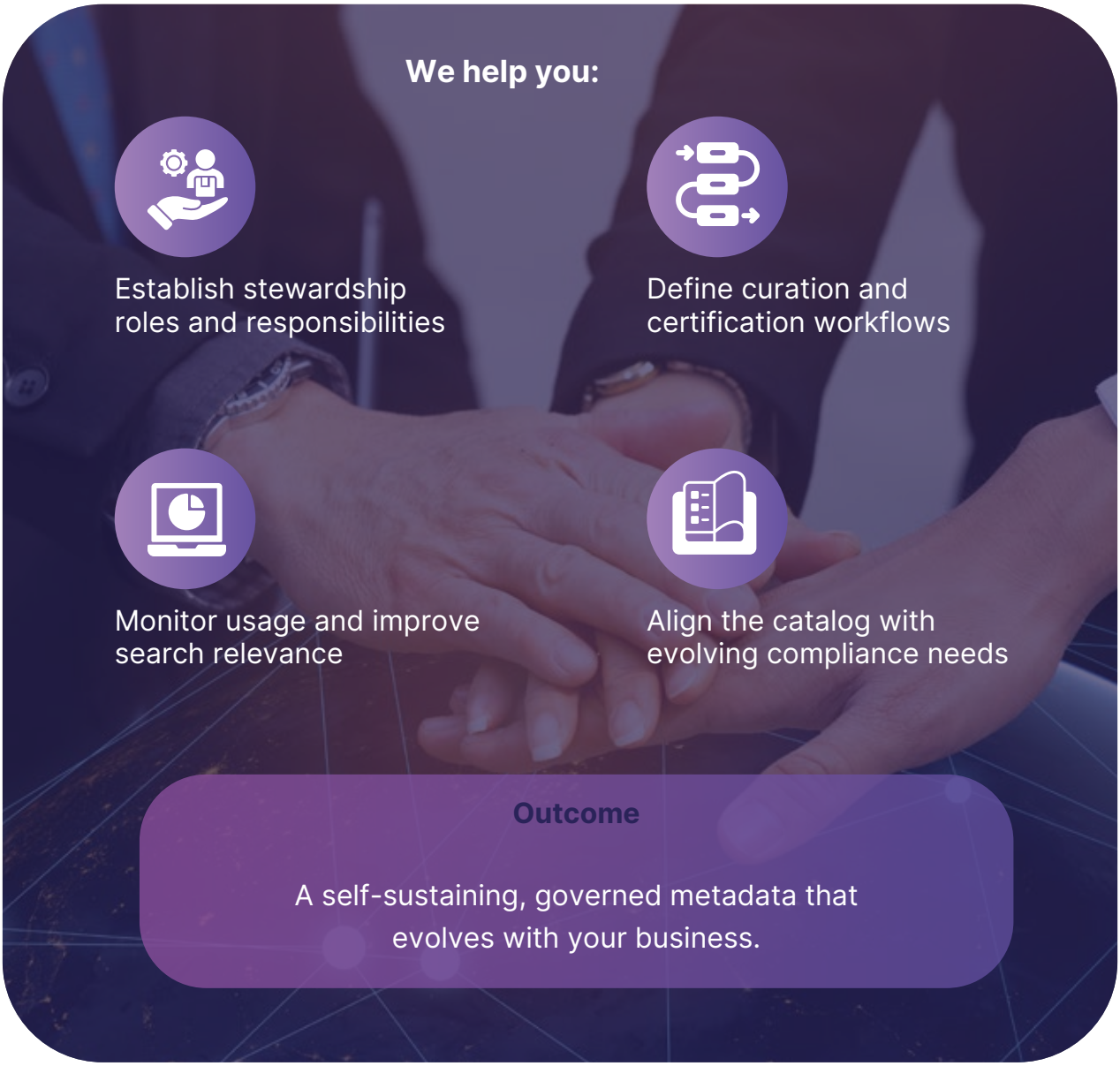
- Role-based training for business users, data stewards, and analysts
- Practical workshops and on-demand learning resources
- Ongoing support for onboarding, troubleshooting, and knowledge sharing

Outcome

Confident users, stronger data ownership, and a growing data-driven culture.

6.5. Post-Deployment Governance - Keeping Your Metadata Active, Accurate, and Aligned

Once deployed, governance is key to keeping the metadat up-to-date and trusted. ChainSys enables automated metadata refreshes, stewardship workflows, and data quality monitoring.



Chapter 7: Real-World Case Studies

7.1 Centralizing all metadata from 30+ applications across the enterprise in 12 Weeks

Client Overview

An Ohio-based global provider of power, cooling, and IT infrastructure solutions for data centers and critical facilities, operating across cloud and edge environments, faced major data visibility challenges during its enterprise-wide digital transformation. Following a merger of two major infrastructure businesses and a shift from legacy mainframes to Oracle EBS and Oracle Cloud in a hybrid global setup (APAC, Americas, and EMEA), business users struggled to locate, assess, and trust data across the organization. The lack of data discoverability, poor visibility into data quality and content, and duplicated efforts in recreating existing data sets significantly hindered operational efficiency and decision-making.

Project Scope

Integration of Heterogeneous Systems into a Centralized Data Lake

Consolidate data from 30+ legacy and modern applications into the client's Cloudera Hadoop-based data environment (Development, Production, and DR clusters), ensuring proper authorization via LDAP, Kerberos, and Sentry for secure access and control.

Data Catalog Implementation for Discovery and Trust

Deploy a comprehensive Data Catalog solution to centralize metadata from all integrated systems, enabling business users to search, explore, and evaluate data sets with improved visibility into content, quality, and relevance.

Support for Hybrid Architecture Across Global Regions

Ensure seamless support for hybrid environments where legacy and new systems coexist across APAC, EMEA, and the Americas, maintaining data consistency and accessibility post-migration to Oracle EBS and Oracle Cloud.

Silver and Gold Layer Enablement for Trusted Reporting

Validate, cleanse, and enrich data into curated Silver and Gold layers within the production data lake, enabling standardized and trusted reporting using enterprise-grade BI tools.

Optimization of Data Usage and Elimination of Redundancy

Streamline business user access to reliable data, reducing time spent locating, validating, and duplicating data sets, enhancing operational efficiency and decision-making agility.

Solution

Robust Data Catalog for Unified Visibility

The ChainSys Data Catalog served as the backbone of the solution, centralizing all structured and unstructured metadata while offering automated insights like data statistics, patterns, and potential PII, making data more discoverable and trustworthy across the enterprise.

Automated Metadata Enrichment

The solution automatically generated valuable metadata insights, such as data statistics, patterns, and probable values, enabling a deeper understanding of data assets.

Intuitive Data Discovery:

Users gained a powerful, searchable interface that simplified navigation across the data landscape, improving data accessibility and usability organization-wide.

Enterprise-wide Data Dictionary & Business Glossary

The implementation of a standardized data dictionary and business glossary promoted consistency, transparency, and collaboration across departments.

PII Detection for Compliance

The catalog enabled automated scanning and identification of Personally Identifiable Information (PII), supporting privacy compliance and improving risk management.

Chapter 8: Your Next Steps with ChainSys dataZense

8.1. Assess Your Metadata Maturity with ChainSys Experts

A successful Data Management initiative begins with a deep understanding of your existing metadata landscape. ChainSys offers a comprehensive Metadata Maturity Assessment, which helps you identify your current state and plan the necessary steps to get where you want to go.

Key Components of Our Metadata Maturity Assessment:

Data Inventory Analysis:

We evaluate the completeness of your metadata across systems, ensuring that all business-critical data is captured and categorized.

Governance Gap Identification:

Our experts review your existing data governance model to uncover any weaknesses or inefficiencies in how data is managed, tracked, and secured.

Process Evaluation:

We assess your current data processes, such as data classification, tagging, data lineage, and stewardship, to ensure they align with best practices for compliance and operational efficiency.

Technology Integration Check:

We analyze your technology stack to ensure seamless integration with dataZense, focusing on connectivity, scalability, and adaptability.

Benchmarking:

Using industry-leading benchmarks, we compare your organization's metadata maturity against peers, identifying areas for improvement and innovation.

Benefits of the Assessment:

Customized Roadmap:
Gain a personalized plan for achieving greater metadata maturity, with milestones, deliverables, and timelines.

Risk Mitigation:
Identify potential data governance and security risks before they become problematic.

Cost-Effective:
Address inefficiencies early on to avoid high remediation costs later in the process.

With ChainSys's expert guidance, you'll have a clear, actionable roadmap for enhancing your metadata practices and achieving optimal governance and transparency.

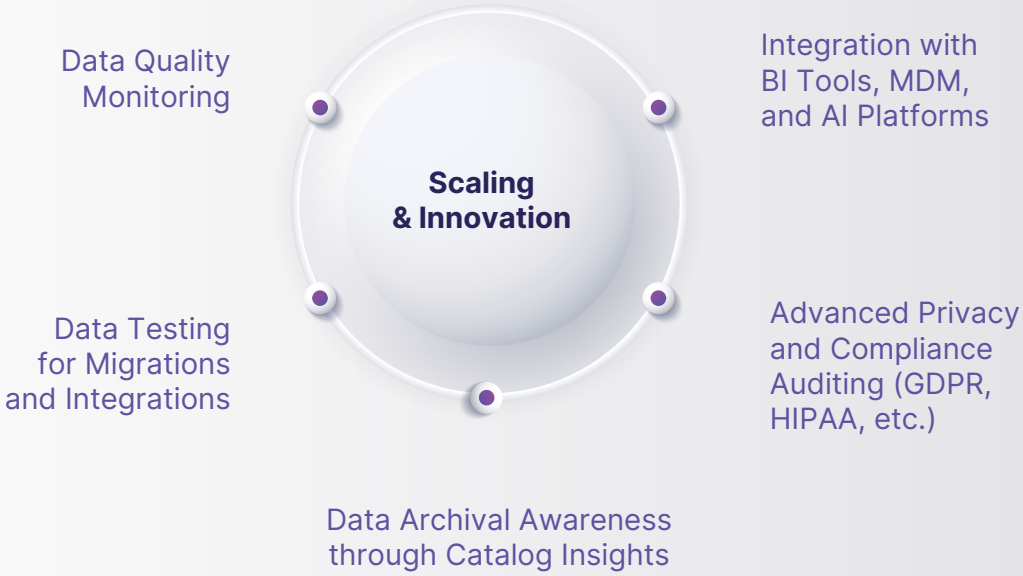
8.2. Implement our 90-Day Quick Start Plan - From Metadata Chaos to Data Confidence

Duration	Focus Area	Outcomes
Days 1–15	Discovery & Inventory	Connect systems, auto-harvest metadata
Days 16–30	Classification & Glossary	AI-driven tagging and defining business terms
Days 31–45	Lineage & Relationships	Map dependencies, visualize impacts
Days 46–60	Stewardship Setup	Assign roles, review policies
Days 61–90	Governance Launch	Monitor usage, enforce policies, and scale cataloging

Designed for value delivery in weeks, not months.

8.3. What Comes Next? Scaling and Innovation

After your first 90 days, most customers expand usage into areas like

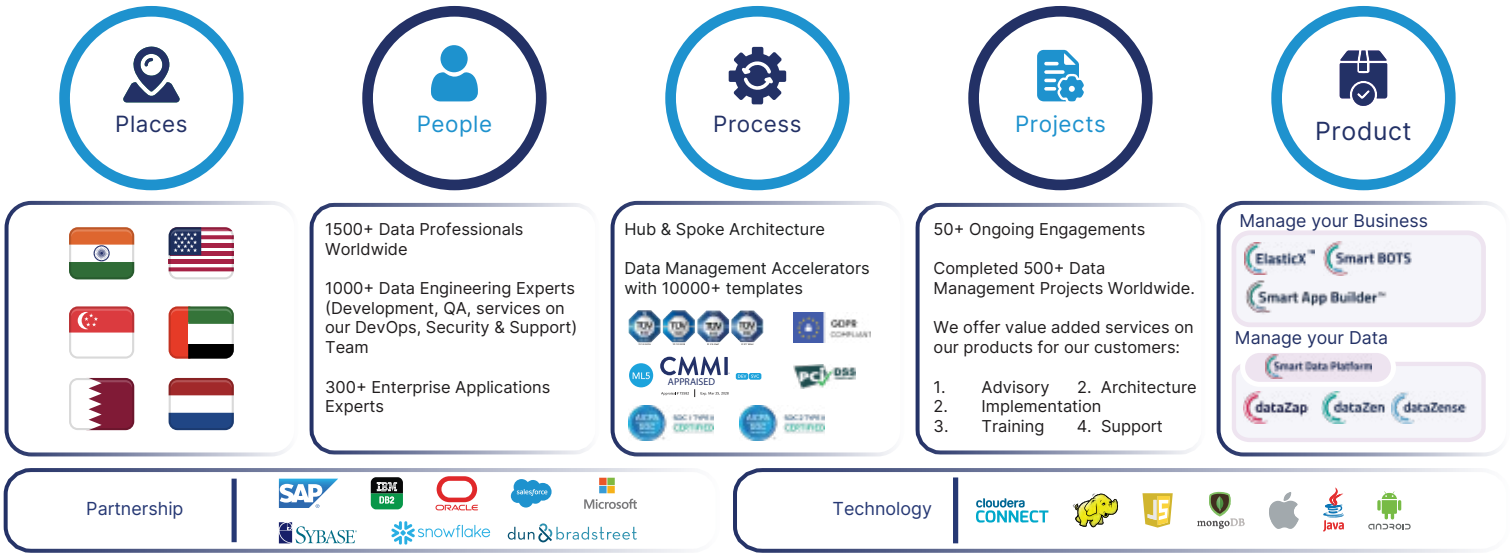


Chapter 9: ChainSys – A Strategic Partner, Not Just a Vendor

Empowering Your Data Transformation with Expertise, Integration, and Trust

At ChainSys, we believe that the key to success is collaboration. We are more than just a technology provider, we are your strategic partner. Our goal is to empower your organization with the tools, expertise, and support you need to harness the full potential of your data. Here's why companies across industries choose ChainSys as their trusted partner for data management, integration, and governance:

9.1 Decades of Data Management Expertise



For over two decades, ChainSys has been at the forefront of data management innovation, providing proven solutions to the world's most complex data challenges. Our team of data experts brings an in-depth understanding of the technical, regulatory, and business complexities of managing data at scale.

Why Our Expertise Matters:

End-to-End Data Solutions: From data migration and integration to data governance and analytics, we cover all aspects of your data journey.

Industry Experience: We've successfully worked with a wide range of industries, including finance, healthcare, retail, manufacturing, and energy.

Proven Methodologies: Our best-in-class methodologies ensure that your data strategy is both robust and adaptable to the fast-evolving digital landscape.

Pro Tip:

Leveraging ChainSys's expertise gives you the advantage of working with seasoned professionals who understand the nuances of data management. Our consultative approach ensures that the solutions we recommend align with your specific goals.

9.2. Deep Integration with Oracle, SAP, Salesforce, Snowflake, and More

In a world of disparate systems, your data needs to flow seamlessly across multiple platforms. ChainSys offers deep integration capabilities that make this a reality. Whether you are using Oracle, SAP, Salesforce, Snowflake, or other enterprise systems, we ensure your data is unified, accurate, and accessible.

Our Integration Capabilities Include:

Oracle: Seamless integration and migration capabilities for Oracle applications, databases, and cloud environments.

SAP: Robust data integration for SAP ERP, S/4HANA, and SAP SuccessFactors, ensuring smooth transitions during digital transformation projects.

Salesforce: Effortless syncing of Salesforce data with other business systems for a 360-degree view of customer and operational data.

Snowflake: Accelerating data transformation and analytics with Snowflake's cloud data platform, ensuring scalability and speed.

Custom Integrations: ChainSys can integrate with virtually any system, providing tailored solutions based on your specific requirements.

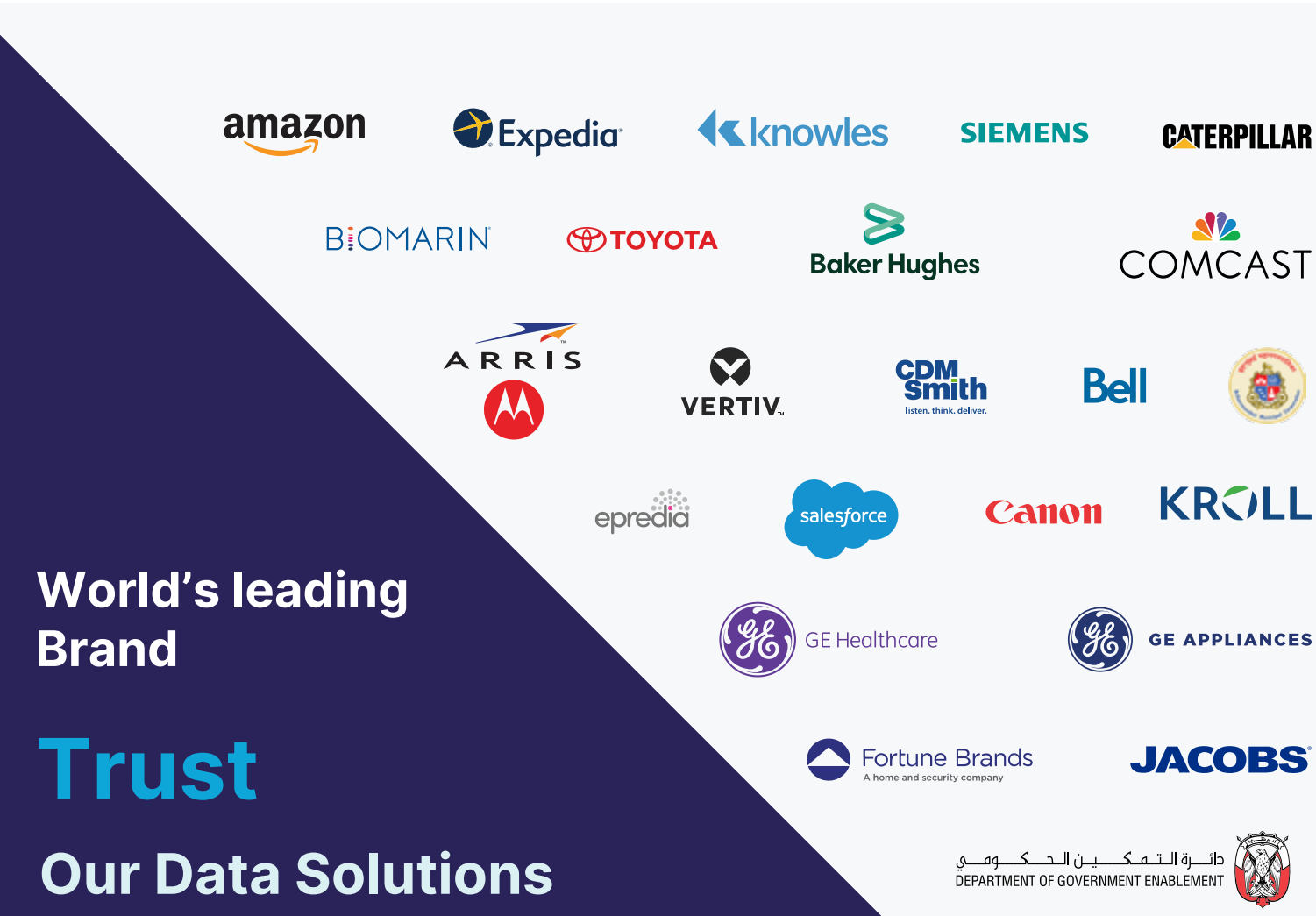
How This Benefits Your Organization:

Unified Data Ecosystem: Bring together data from multiple sources for a single source of truth.

Increased Efficiency: Eliminate silos and redundancies, allowing teams to work more collaboratively and efficiently.

Real-Time Data Access: Enable data-driven decisions with near-instantaneous access to the most up-to-date information.

9.3. Trusted by Fortune 500 Companies and Government Agencies Globally



World's leading Brand

Trust

Our Data Solutions

When it comes to choosing a data partner, trust is paramount. ChainSys has earned the confidence of some of the world's largest corporations and government agencies, thanks to our track record of excellence, reliable delivery, and commitment to compliance.

Why Trusted Organizations Choose

Proven Track Record at Scale:
From Fortune 500s to government agencies, ChainSys solutions have powered over 300+ successful enterprise implementations worldwide. Our platforms manage billions of records across complex ecosystems, ERP, CRM, cloud, legacy, and more, demonstrating scalability, speed, and success in high-stakes environments.

End-to-End Data Intelligence, Not Just a Catalog

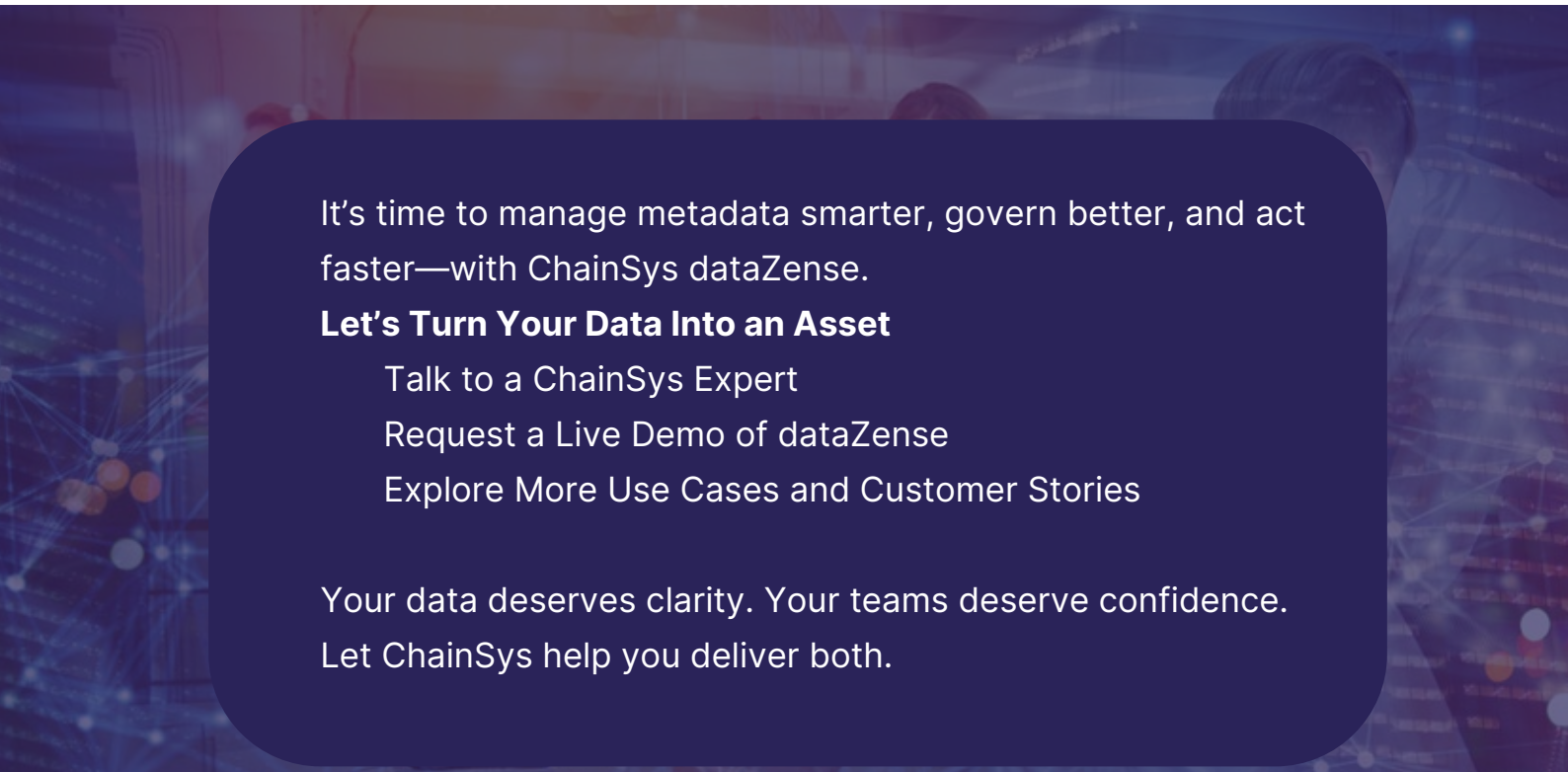
ChainSys dataZense goes beyond traditional metadata management by offering a complete data intelligence suite, including data profiling, lineage tracing, quality scoring, access controls, and usage analytics all in one unified platform. That means fewer tools, faster implementation, and deeper insights.

AI-Powered Automation

Manual tagging and governance are a thing of the past. ChainSys brings AI and ML-driven automation to metadata discovery, classification, sensitivity tagging, and relationship mapping. This enables faster onboarding, better compliance, and smarter decision-making.

Enterprise-Grade Governance & Security

With robust role-based access, customizable approval workflows, and end-to-end lineage tracking, ChainSys helps organizations stay audit-ready and compliant with evolving global regulations—GDPR, HIPAA, CCPA, and more.



It's time to manage metadata smarter, govern better, and act faster—with ChainSys dataZense.

Let's Turn Your Data Into an Asset

Talk to a ChainSys Expert

Request a Live Demo of dataZense

Explore More Use Cases and Customer Stories

Your data deserves clarity. Your teams deserve confidence. Let ChainSys help you deliver both.

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