

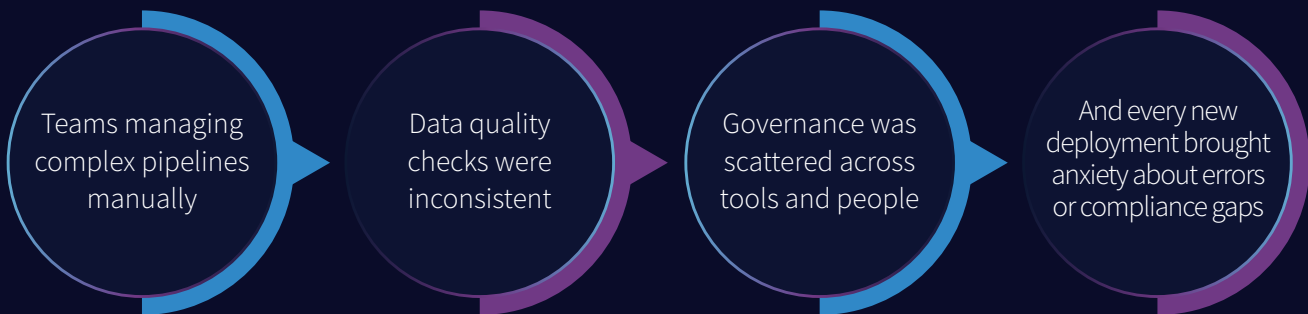
Point of View

# **Applying DataOps Principles Using IDMC to Deliver Trusted Data at Scale (+ Business Case Study)**



When I first started applying data operations (DataOps) principles to real-world projects, I quickly realized that the biggest challenge wasn't the technology. It was ensuring speed and trust in data delivery at scale.

As a data architect, I have often seen how data workflows slow projects:



For CIOs, CDOs, and engineering leaders, these bottlenecks mean one thing: business decisions are delayed because data cannot be trusted or delivered fast enough.

That's when the principles of DataOps became essential in my work. They offered a way to:

- Automate workflows instead of relying on manual interventions.
- Build governance and quality into the process, not bolt them on later.
- Enable continuous integration and deployment of data, the same way development operations (DevOps) transformed software.

Early on, I took away that DataOps makes data teams more productive and gives business leaders confidence that timely, reliable, and compliant data supports every decision.

In this POV, I share how we applied DataOps principles using Informatica Data Management Cloud (IDMC) in real-world scenarios, the lessons we learned, and the measurable outcomes we achieved.

Read ahead to learn how DataOps moves from theory to practice and why it matters for enterprises looking to scale data responsibly.

## Why DataOps Principles Matter in Modern Data Delivery

Over the years, I've seen data teams struggle with the same challenge: delivering trusted, high-quality data quickly without breaking workflows or introducing errors. That's where DataOps comes in.

At its core, DataOps applies Agile and DevOps practices to the world of data. It is a methodology and a culture that promotes automation, collaboration, and governance in data engineering. For enterprises, adopting DataOps means moving faster, reducing manual effort, and ensuring business leaders can trust the data they rely on.

Naturally, the question arises: how is DataOps different from the DevOps many of us already know?

### DataOps vs DevOps

DevOps primarily focuses on software development and IT operations, ensuring faster product releases and infrastructure stability.

DataOps, on the other hand, focuses on data pipelines, quality, and analytics delivery, ensuring that the correct data flows into the right systems with speed and reliability.

This distinction makes it clear why DataOps principles are essential. They structure how data is processed, validated, and governed across the enterprise. Let's look at the key principles in practice.



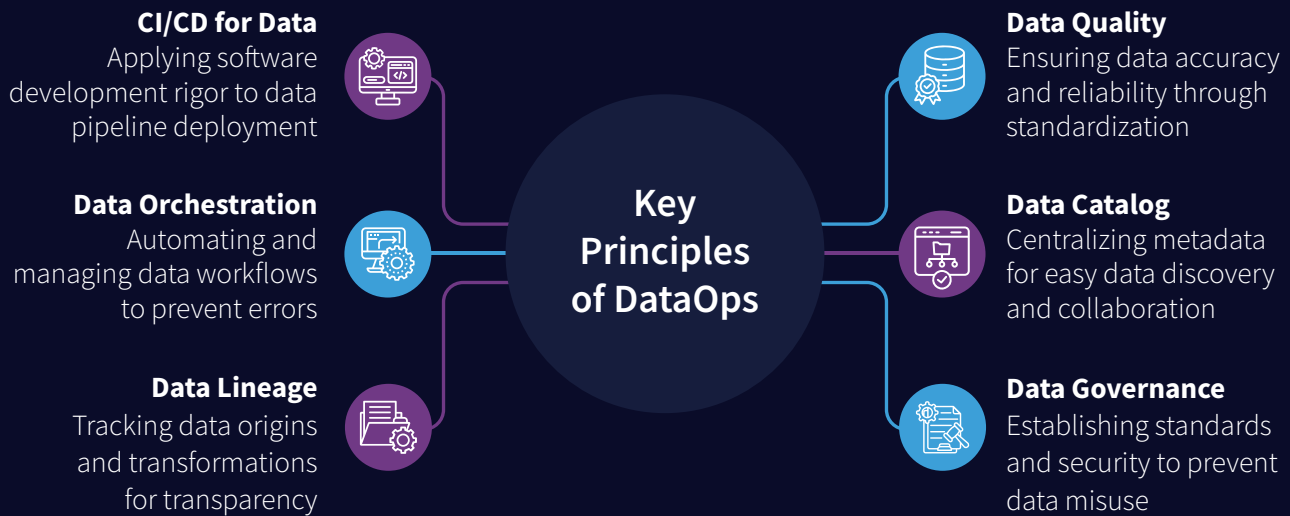


Figure 1: Core principles of DataOps that help enterprises deliver trusted data with speed and reliability



While these principles define the foundation of DataOps, applying them consistently across hybrid and multi-cloud environments requires the proper platform support. One that can manage integration, governance, and quality at scale.

## A Closer Look at the IDMC Platform

The Informatica Intelligent Data Management Cloud (IDMC) is a cloud-native platform designed to manage, integrate, and govern data across distributed environments.

It is not limited to one function but supports the entire data lifecycle, from ingestion and integration to governance, quality, and security.

Its flexibility allows enterprises to address the challenges of scale, regulatory compliance, and trust in data delivery without being tied to a single technology stack.

**IDMC provides a set of workbenches that help operationalize different aspects of DataOps in practice. These include:**

- Data Integration Workbench to build and manage complex integration pipelines.
- Monitor Workbench to track workflows and performance.
- Application Integration Workbench to connect applications and automate business processes.
- Administrator Workbench to configure, manage, and secure the environment.
- Data Quality Workbench will apply and enforce quality standards.
- Data Governance & Catalog Workbench for metadata management and data discovery.
- AI & Recommendations Workbench (CLAIRE) that uses metadata intelligence to automate and optimize tasks.

These workbenches provide the foundation for implementing DataOps principles in enterprise environments. However, the real value comes when these capabilities are combined to operationalize DataOps principles, making them part of daily workflows, rather than abstract guidelines.

# Leveraging IDMC to Operationalize DataOps Principles

DataOps implementation using Informatica IDMC ensures that data pipelines are automatically built, validated, and version-controlled as soon as changes are made.

IDMC provides a platform for building, automating, and managing data pipelines across hybrid and multi-cloud environments. DataOps has the following key pillars:

## Data Orchestration

- Build taskflows to orchestrate complex workflows with conditional logic, loops, and error handling.
- Automate retries, branching, and notifications.

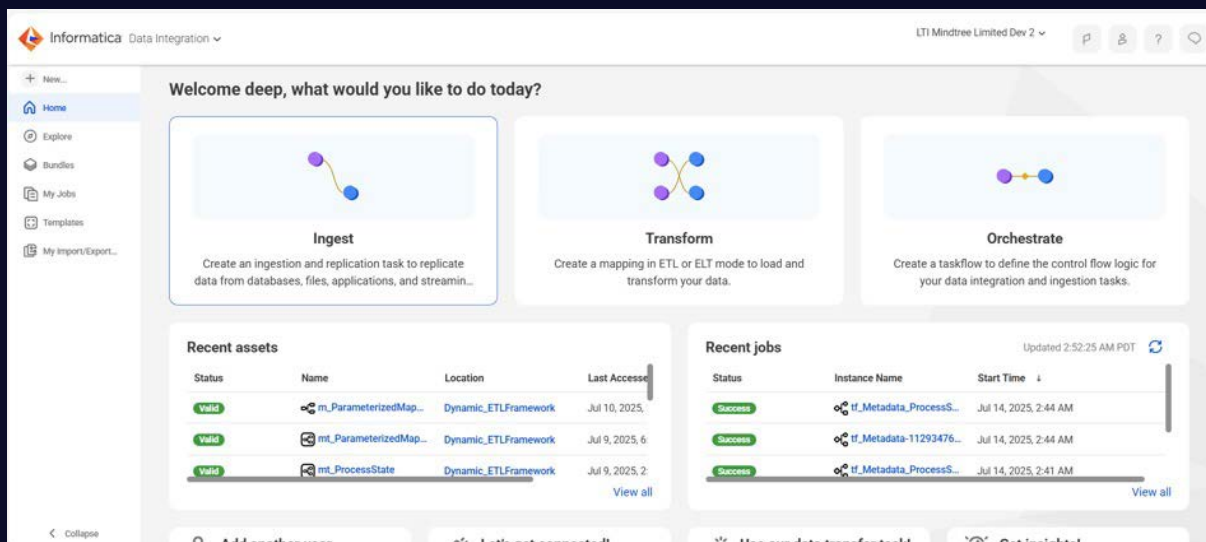


Figure 2: IDMC data integration workbench for Orchestration

## Data Quality

- Use the IDMC data quality workbench to create data quality rules.
- Apply reusable data quality rules to enforce standards like format, completeness, and uniqueness.

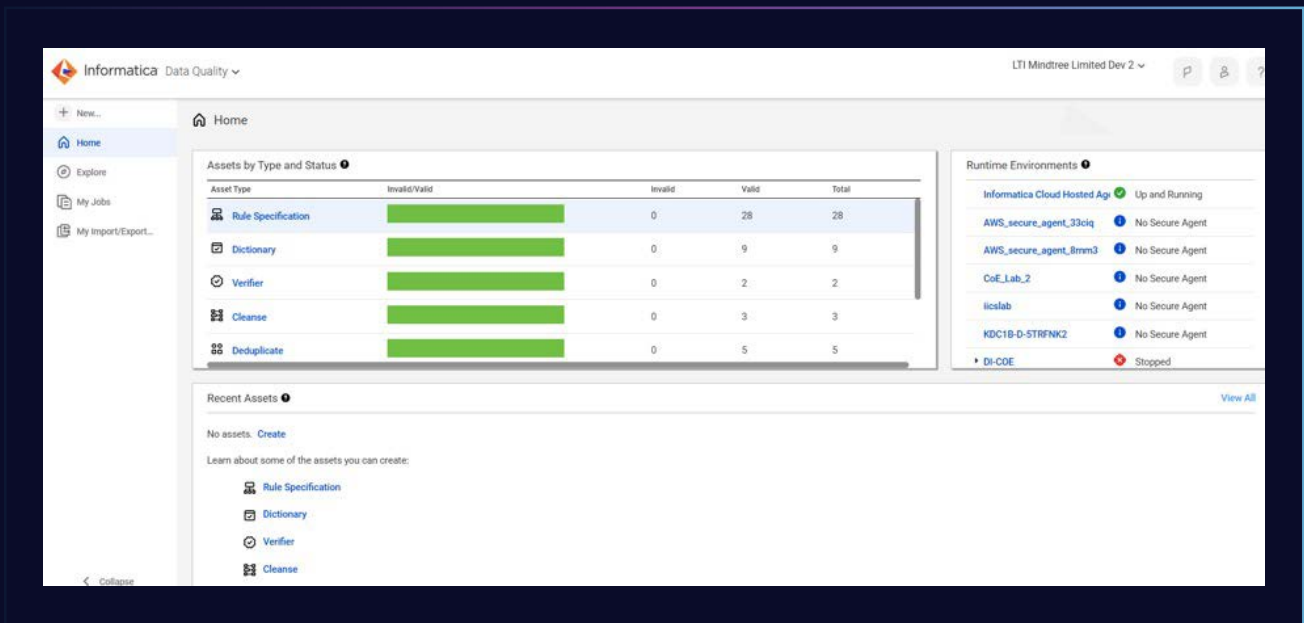


Figure 3: IDMC data quality workbench for DataOps Data Quality principle

## Data Catalog and Data Governance

- Use IDMC Data Governance and Catalog workbench for Metadata Management. It stores technical, business, and operational metadata.
- **Lineage Tracking:** Visualizes data flow from source to destination.
- **Compliance Management:** Ensures adherence to regulations like General Data Protection Regulation (GDPR) and Health Insurance Portability and Accountability Act (HIPAA).
- **Role-Based Access Control:** Manages who can view or modify data.
- **Audit Trails:** Tracks changes and usage for accountability.
- **Data Stewardship:** Assigns ownership and responsibility for data quality.
- **Data Lineage:** Track the origin and transformation of data to improve understanding and troubleshooting.

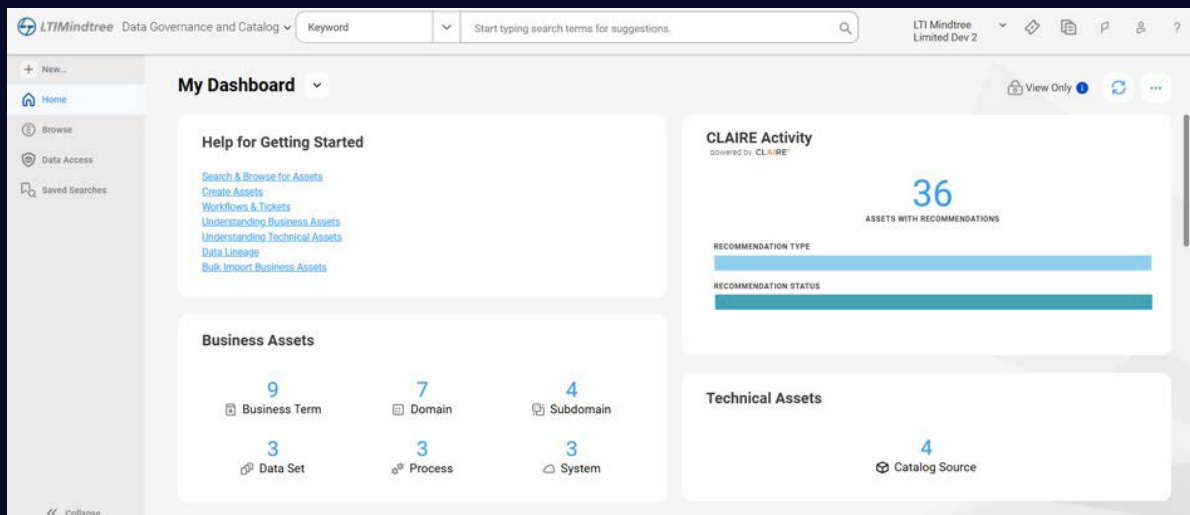


Figure 4: IDMC Data Catalog and Data Governance workbench for DataOps Data Catalog and Data Governance principle

## Continuous Integration

- Use CDI workbench to create automatic data pipelines.
- Use parameterized mappings and mapping configuration tasks (MCTs) to create reusable components.
- Automate ingestion from diverse sources (cloud, on-prem, APIs).

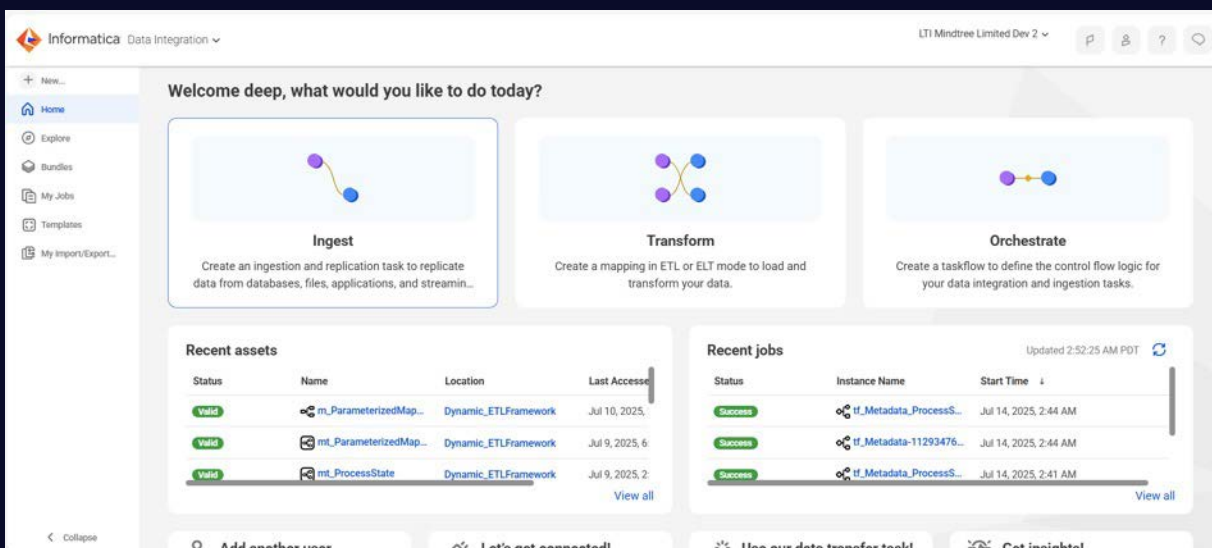


Figure 5: IDMC Data Integration workbench for DataOps Continuous Integration principle

## Validation/Testing

Testing Strategies in DataOps are essential to ensure that data pipelines are reliable, accurate, and scalable. In the DataOps framework, especially when using platforms like Informatica IDMC, testing is not a one-time activity, but a continuous, automated process integrated into the development and deployment lifecycle. Below are a few key testing strategies in DataOps:

### Data Quality Integration

- Apply profiling and validation rules using Informatica Data Quality (IDQ).
- Stop or flag jobs when data quality thresholds are breached.

### Automated Unit and Regression Testing

- Validate each mapping & task flow output to simulate end-to-end execution and validate intermediate outputs.
- Compare outputs between pipeline versions to ensure backward compatibility.

## Continuous deployment and version control of data pipelines

Deployment and version control for data pipelines enable teams to deploy workflows in a reliable, automated, and scalable way. When implemented using platforms like Informatica IDMC, this brings agility and reliability to data engineering.

### Continuous Deployment & Version Control– key components Version Control System (VCS)

- Tracks changes to mappings, taskflows, and configuration files.
- Supports branching, merging, and rollback.
- IDMC Administrator workbench supports Git Configuration (GitHub, GitLab, and Bitbucket integration).

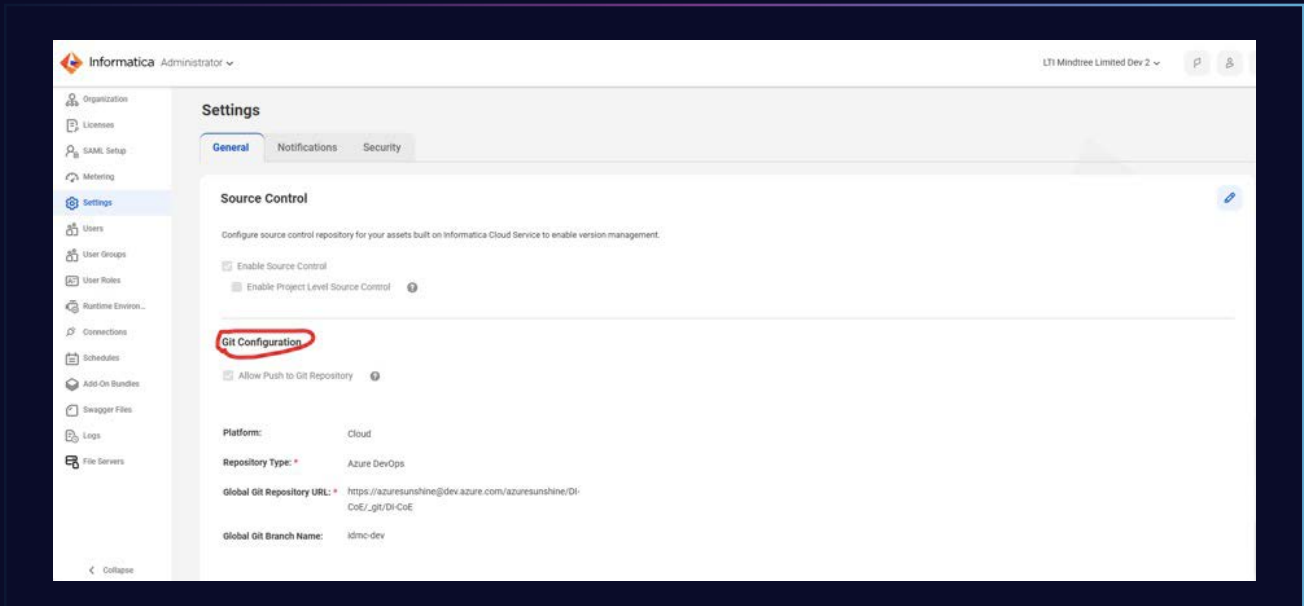


Figure 5: IDMC Administrator Workbench Used to Set Up Continuous Deployment

### Pipeline Orchestration

- Automates deployment across environments (Dev → Test → Prod).
- Uses tools like Jenkins, Azure DevOps, or GitHub.

## AI & Recommendations Workbench (CLAIRE)

CLAIRE, Informatica's AI-powered Metadata intelligence engine, significantly enhances DataOps by bringing automation, intelligence, and agility to data management workflows.

Benefits of CLAIRE in DataOps:

### Smart Mapping Suggestions

- CLAIRE analyzes metadata and usage patterns to recommend optimal data mappings and transformations.

## Automated Metadata Discovery

- CLAIRE scans and catalogs metadata across systems.
- Speeds up data onboarding and reduces manual effort.

## Intelligent Recommendations

- Suggests mappings, transformations, joints, etc.
- Help teams build pipelines faster and more accurately.
- Reduces manual effort and accelerates pipeline development.

## Performance Optimization

- CLAIRE recommends performance tuning strategies based on historical job runs.

## Natural Language Interaction

- CLAIRE allows users to interact with data assets using natural language queries.
- Simplifies access and understanding for non-technical users.

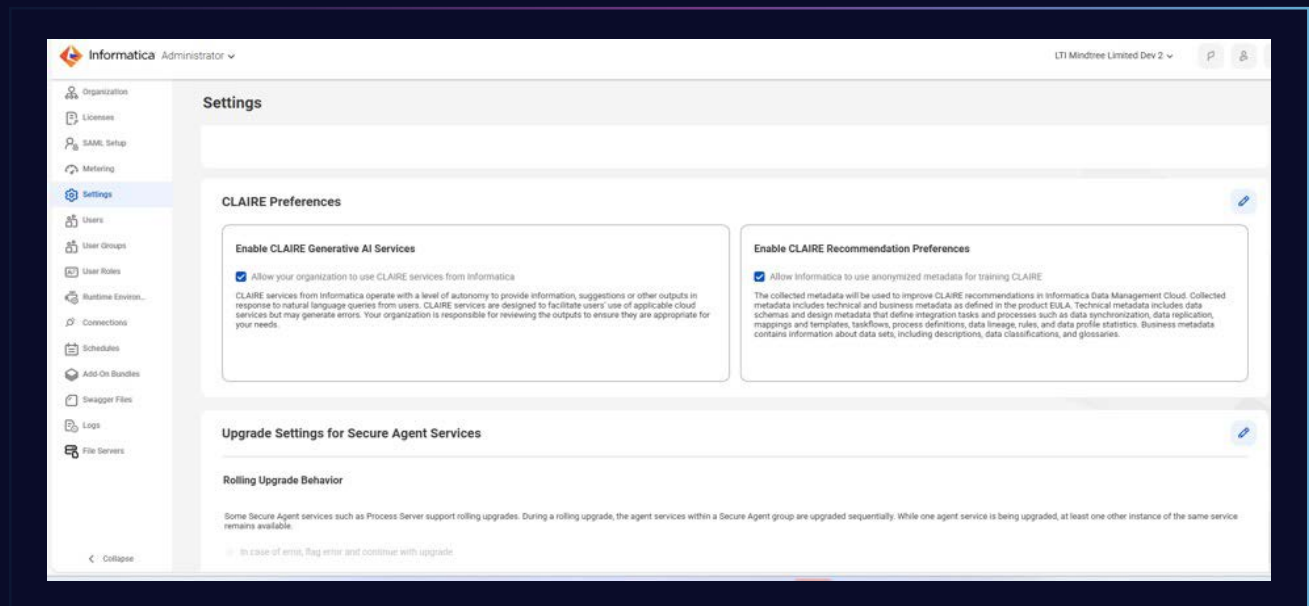


Figure 6: IDMC Administrator Workbench Used to Set Up Claire GenAI Services

While principles and platforms provide the framework, real-world application is the best way to understand their impact. A case study shows how these ideas translate into measurable outcomes in practice.

## CASE STUDY

# Real-World DataOps with IDMC

Let me share an example from the real estate industry to illustrate how DataOps principles can be operationalized on IDMC.

Our client was one of the largest owners and operators of residential real estate brokerages, with a presence in more than 50 of the 100 largest metropolitan areas in the United States. The scale and complexity of their data landscape made them a perfect candidate for DataOps-driven modernization.



**Business challenge:** The enterprise needed an end-to-end DataOps setup and integration with the IDMC data platform for over 1,500 assets. These assets were being migrated from Informatica PowerCenter to IDMC, and the enterprise expected the new platform to function like a SaaS solution, seamlessly integrating cloud-based data with existing on-premises systems.



**Project scope:** The solution had to deliver end-to-end process orchestration, error logging, alert mechanisms, resilience, recoverability, audit, and balance & control. The goal was migration and creating a stable, future-ready architecture that could scale with the business.



**Our solution:** Working with Informatica, we applied DataOps principles such as CI/CD integration, Git-based version control, automated deployment pipelines, branching strategies, and environment segregation. This allowed the client to continuously deliver trusted data pipelines across environments (Dev, QA, Prod) without manual intervention.



**Business benefits:** The outcomes were significant. Automation reduced manual effort and errors by 40%, and deployment consistency improved by 60% across environments. Traceable version history and approval workflows also enhanced compliance, giving the client confidence in the quality and governance of their data operations.

## Conclusion

The convergence of DataOps principles and IDMC enables organizations to deliver trusted data on a scale. Automation helps minimize manual errors, while continuous testing supports reliability and stability. These elements form a framework designed for future-ready data operations.

From my perspective, what stands out most is that DataOps is becoming an essential discipline for enterprises that want to move fast without compromising trust. As data landscapes grow more complex, enterprises must embed these principles early, invest in platforms and practices that make them repeatable, and continuously adapt as technologies evolve.

For organizations, the takeaway is simple: start small, focus on measurable outcomes, and scale DataOps as a cultural and technical capability. Those who do this well will manage their data more efficiently and build the foundation for innovation and long-term competitiveness.

## Reference

*Using DataOps for Continuous Data Integration and Delivery*, Roshan K, DataOps Redefined, November 21, 2024: <https://www.thedataops.org/dataops-continuous-integration-delivery/>

## About the Author



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Deep Shikha is part of the Informatica Data Integration Center of Excellence (CoE) team. She brings over 13 years of experience in Data Warehousing projects and has led full-cycle implementations of data warehousing and modernization initiatives across various industry sectors.

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