

boomi

The Business Case for

# Change Data Capture (CDC)



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# Change Data Capture Empowers Businesses to Move at the Speed of Their Data

Data is the core of the modern economy. Businesses in every sector succeed or fail based on the data they collect, and how they use that data. Today, companies in crowded markets gain a competitive edge not only from product differentiation but also from efficient data processes.

Key among these efficiencies is speed. In order to make the best decisions and target the proper customers, businesses need to act on up-to-date data. According to [Gartner](#), every year, poor data quality costs organizations an average of \$12.9 million.

Companies must have the right data at the right time to compete in a 24/7 global economy. However, querying data directly against these databases is risky, as it may negatively impact the database performance, which is needed to be optimal to support production systems that power the business. In addition, data from these databases often needs to be combined with data from other third-party systems or sources for deeper insights and context. But many teams still rely on delayed batch processing to sync databases, and batch processing does not sync databases in real-time.

And the batch method remains broadly popular. Replicating data from transactional or operational databases to cloud targets at scale is a very common data integration need. We need transactional database data in order to make timely decisions, automate processes, create new revenue streams – essentially to run our business.

Many businesses are starting to use **change data capture (CDC)** to sync databases more efficiently. **Change data capture empowers businesses to move at the speed of their data.** CDC instantly and automatically syncs databases as soon as the source data changes.

Change data capture enables faster, more accurate business decisions, while minimizing resource expenditure. The technology's instantaneous data updates, cost-effective incremental changes, and light IT footprint offer a win-win-win to businesses.

This eBook is a go-to resource for change data capture. Here, we'll explain what change data capture is, what the business benefits are, and provide an overview of top CDC solutions on the market today.

# What Is Change Data Capture?

Change data capture tracks changes in a source dataset and automatically transfers those changes to a target dataset. Essentially, CDC eradicates the siloization of data. Changes are synced instantly or nearly instantly. In practice, CDC is often used to replicate data between databases in real-time.

Despite the introduction of CDC, most teams still use batch processing to sync data. With batch processing:

- ❌ Data updates only occur at scheduled intervals, leading to outdated information
- ❌ Large batch Jobs consume significant compute resources impacting system performance
- ❌ Deletions and updates may be missed, leading to discrepancies across systems

On the other hand, change data capture offers a new path forward. On a core level, change data capture:

- ✅ Eliminates the delays and inefficiencies of batch processing
- ✅ Provides real-time data synchronization with minimal database impact
- ✅ Enhances scalability while reducing operational costs

With CDC, data sources include operational databases, applications, ERP mainframes, and other systems that record transactions or business occurrences. Targets include data lakes and data warehouses, including cloud-based platforms such as Snowflake, Databricks, Google BigQuery, Amazon Redshift, and Microsoft Azure.



Once the data is replicated on the target database, teams can perform data analysis without taxing the production database. In today's 24/7 marketplace, this kind of setup is becoming increasingly essential, as businesses cannot afford to slow production for any amount of time. Different technologies power change data capture offerings in today's marketplace. These methods include:



**Timestamps.** Tracks "LAST\_UPDATED" and "DATE\_MODIFIED" columns. This method only retrieves changed rows, and requires significant CPU resources to scan all the tables.



**Table Differencing.** Executes a diff to compare source and target tables. This will only load the data that differs. This method is more comprehensive than timestamps, but still places a big burden on the CPU and also introduces a costly merge process on the target side.



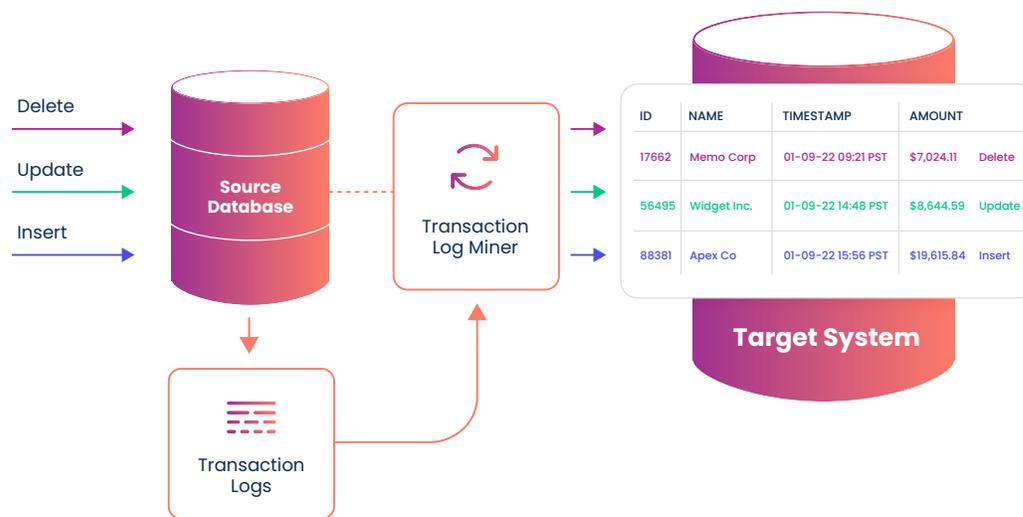
**Triggers.** Triggers are set off before or after commands that indicate a change. With this method, each table in the source database requires a trigger, involving additional configurations and straining the system.



**Log-Based** “Preferred Method”. Database logs are constantly scanned to detect changes. The changes are captured without adding additional SQL loads to the system. This removes significant stress on the CPU.

So, we covered the why—but what is CDC? This process involves identifying and capturing any data changes (i.e., inserts, updates, deletes) in the database logs in real time at point A, using the database engine’s native API, and delivering those changes to point B. Because it only tracks changes in the logs, it eliminates the need for ongoing database replication using the database engine, thereby minimizing the resources required for ETL/ELT processes.

Since CDC processes new database events as they occur, it enables real-time or near-real-time data movement. This makes it a powerful solution for businesses that require up-to-date insights without the performance overhead of full database replication.



Change data (especially log-based CDC) enables teams to replicate data instantly and incrementally. CDC records data changes piece-by-piece, instead of relying on massive, all-at-once transfers. This allows teams to stop treating data migrations as big “projects,” but rather as a byproduct of change data capture.

With CDC, data is always up to date. The source and target databases are continuously synced, eliminating the need for bulk selection. Only modified data is synced with the cloud data warehouse, while all other data remains static. This approach saves significant time, resources, and costs.

# Business Benefits: How Change Data Capture Boosts the Bottom Line

Change data capture is a nifty innovation, but the biggest impact is on a business's bottom line. From unlocking the monetary potential of data, to significant cost-savings, change data capture generates value where it matters the most. Here are some of the ways CDC makes businesses more profitable.

## CDC Generates More Revenue

Data is only as valuable as its relevance. A data point that records a customer entering a brick-and-mortar store is not very valuable 12 hours later. By then, the customer could find dozens of other places to buy a product. For example, Clear Company, a leading talent management platform provider, needed to ensure their customers were getting near real-time data about their talent recruiting processes. As in many other areas, if your recruiting process is slow, you may lose great candidates. Using Rivery's (now part of Boomi) log-based CDC data replication, [Clear Company](#) moved away from a process that updated only once a day and now provides customers with near real-time data. (Read more about the Rivery platform in the CDC tools market landscape below.) For their customers, that means better hiring outcomes — and for Clear Company,

it means greater customer satisfaction and increased investment in their offering.

But businesses that rely on outdated data don't just risk losing individual deals. These companies also open themselves up to the long-term consequences of flawed decision making. While bad data might lead to a few missed opportunities, it could also cause systemic issues that have a lasting negative impact on the business. These risks are difficult to measure upfront and even harder to reverse once a data infrastructure is in place.



With change data capture, the risks associated with out-of-date data are entirely eliminated. Change data capture provides teams with instant access to the most up-to-date data. This allows businesses to make decisions and take action with the best data available. CDC necessarily improves the speed and accuracy of the data. Not only is data updated faster, it is also always 100% accurate.

Change data capture enables businesses to act on opportunities quicker. Companies can beat competitors to deals, all while cycling through a higher volume of opportunities. CDC also provides higher data quality for decision making. All of this empowers businesses to make faster, smarter decisions that generate more revenue.

### CDC Creates Savings

90% of the world's data was created in the last two years. The infrastructure of the internet, built in some cases decades ago, does not have the bandwidth to transfer massive volumes of data instantly. This presents a significant challenge for businesses undertaking high-data-volume projects, such as database migrations. These all-at-once data transfers severely congest network traffic, leading to slow and costly migrations.

Change data capture, however, loads data incrementally as opposed to all at once. Each time a data point changes in the source system, it is updated in the target system, requiring minimal bandwidth.

With CDC, businesses are never subjected to large data transfers that overwhelm network bandwidth. This reduces the cost of data transfers and saves weeks, months, and sometimes years of time.

[Howard Hughes](#), a large-scale real estate developer, slashed data costs by 83% by switching to Rivery and leveraging Change Data Capture (CDC). Their previous setup—built on Talend, dbt, Jenkins, and MySQL—was costly and inefficient, requiring six external consultants. By consolidating everything into Rivery's single platform, they streamlined ingestion, reduced ETL time from 12 hours to under 40 minutes, and eliminated expensive dependencies.



*We had four daily data loads to Snowflake, each taking three hours. Every failure required a full restart of the process. Our enhancements with Rivery's CDC allowed us to cut our Snowflake costs by 80%. It's crazy to look at the three-year chart and see the difference.*

**Robert Dunlap**

Data Architect at Howard Hughes



## CDC Protects Business Assets

One of the core issues with batch processing is that the method inherently creates opportunity costs. During data transfers, batch loads slow down production databases and degrade performance. This can create opportunity costs in the form of lost deals.

Consider an e-commerce site with higher customer churn because the overtaxed production database slows down the site an hour each day. This is why batch processing requires specified “windows” when the production database is less taxed. But in a 24/7 global economy, there’s never an acceptable time to degrade the performance of a production database.

Change data capture, particularly the log-based type, never burdens a production data’s CPU. Log-based CDC captures changes directly from database logs, and does not add any additional SQL loads to the system. Incremental loading ensures that data transfers have negligible impact on database performance. What this means, in business terms, is that CDC eliminates the opportunity costs that arise when a business is forced to slow down vital tech infrastructure.

## CDC Eliminates Opportunity Costs

Data is not just something a company collects. In today’s environment, data is the lifeblood of a business. Data is a business asset just as much as equipment or property are. However, mishaps that damage or delete data are common. For most businesses, such an event is not a possibility, but a probability. And for many companies, luck is the only thing keeping the incident from turning into a data catastrophe.

Change data capture protects data, a prime business asset, from deletion and destruction. By tracking changes not just to data, but to metadata as well, CDC offers companies that experience data loss a chance to repopulate impacted datasets. Once data is lost, it can’t be regenerated. But with the protection of change data capture, businesses can recover their essential data to fuel further business growth.

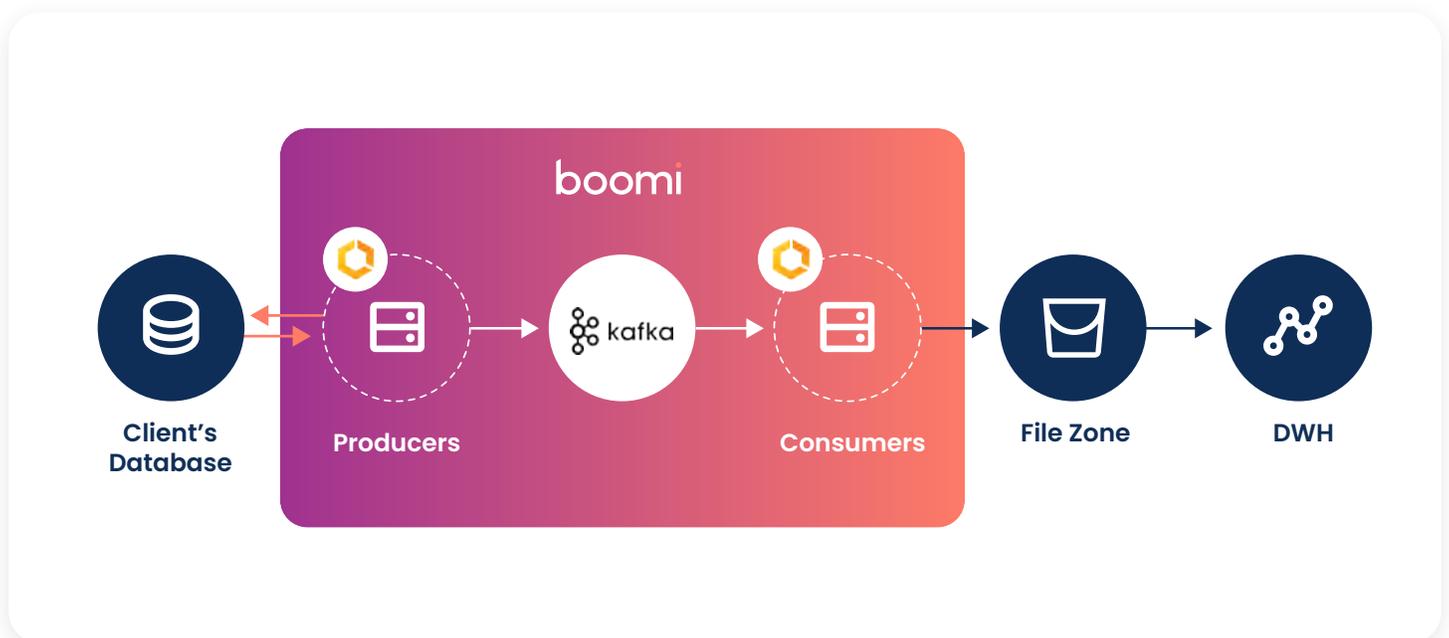
# Rivery (Now part of Boomi) Change Data Capture: Instant, Automatic Data Integration Comes Full Circle

Although change data capture maintains impressive individual benefits, the true utility of the feature is not experienced in isolation. To make the biggest impact, CDC must operate as one piece in a broader solution. Rivery Change Data Capture accentuates the Rivery platform in just such a way.

Rivery Change Data Capture instantaneously syncs database updates with a cloud data warehouse. The feature not only enables faster data projects, but also minimizes resource expenditure. Rivery CDC is more than an individual feature. The capability is another

component of Rivery's core mission to automate and instantiate the entire data integration process, from start to finish.

Data teams can set up Rivery CDC in a few clicks. The feature uses real-time streaming to sync data changes between the source and target as they happen, including schema alterations. This enables teams to generate more revenue by making faster, smarter decisions with high-quality data. Rivery CDC also loads data incrementally, creating cost and time savings by avoiding colossal all-at-once data transfers.





Rivery CDC's adherence to cloud data warehouse best practices also generates significant savings. Rivery CDC continuously streams into a client's staging area, not into the database tables themselves. This produces cost-savings when customers are charged for updating database tables with each new record.

Rivery CDC constantly scans database log files for changes. This adds no new SQL loads to the system. Production databases can run at full capacity 24/7, eliminating opportunity costs that arise from slowing down operations. Rivery CDC's log-based engine also records all changes to data and metadata, including deleted rows. This historical archive protects business assets from unforeseen circumstances, such as human error or destruction.

As a standalone feature, Rivery change data capture ensures that data teams never have to worry about database syncs ever again. But when combined with the rest of the platform, Rivery CDC is another key piece of Rivery's automation of the data integration process, from beginning to end.

With Rivery, automation starts at the very first step: connecting data sources.

Many teams spend countless hours and precious development time building data connectors. But with Rivery, data connectors come with the platform, prebuilt and ready to use. Rivery offers 200+ native data connectors right out of the box. With no code functionality, each data connector is set up in a matter of clicks. Rivery also enables users to configure custom connections using low code.

Logic Rivers are another core feature. Logic Rivers automates both the ingestion of data and the execution of SQL queries within a cloud data warehouse, as well as the execution of Python scripts. With Logic Rivers, customers can automatically orchestrate and transform their entire data workflow. Teams can schedule data integration workflows that execute on their own.

By combining these capabilities with DataOps, master data management, application integration, API management, and AI management, the organization is equipped to address any integration challenge or AI agent requirement at the pace the business expects, all without creating a maintenance nightmare.

# Change Data Capture: Marketplace Landscape



As the demand for data replication grows, many solutions are emerging to meet this need. In today's market, change data capture is offered as both a product feature or as a standalone product. Today, CDC solutions are built for small, medium, and enterprise businesses, with technologies ranging from log-based to timestamp-based.

Below, we've compiled a representative overview of the market landscape to help you navigate the space.

## **Qlik Replicate**



Qlik develops business intelligence and data visualization software, in addition to offerings such as Qlik Replicate, a change data capture technology. Qlik Replicate uses database logs to scan and track data changes, taking the burden off of production databases, so business operations can continue uninterrupted. The solution enhances data delivery performance to boost strategic initiatives such as Big Data analytics.

## **PowerExchange Change Data Capture**



Informatica offers enterprise cloud data management and data integration software, including PowerExchange Change Data Capture, a long-standing ETL solution. PowerExchange Change Data Capture records changes in a number of instances, such as customer creation or package location, as they happen. The stream of data updates is then synced in real-time with multiple targets, without intermediate steps.

## Rivery Change Data Capture

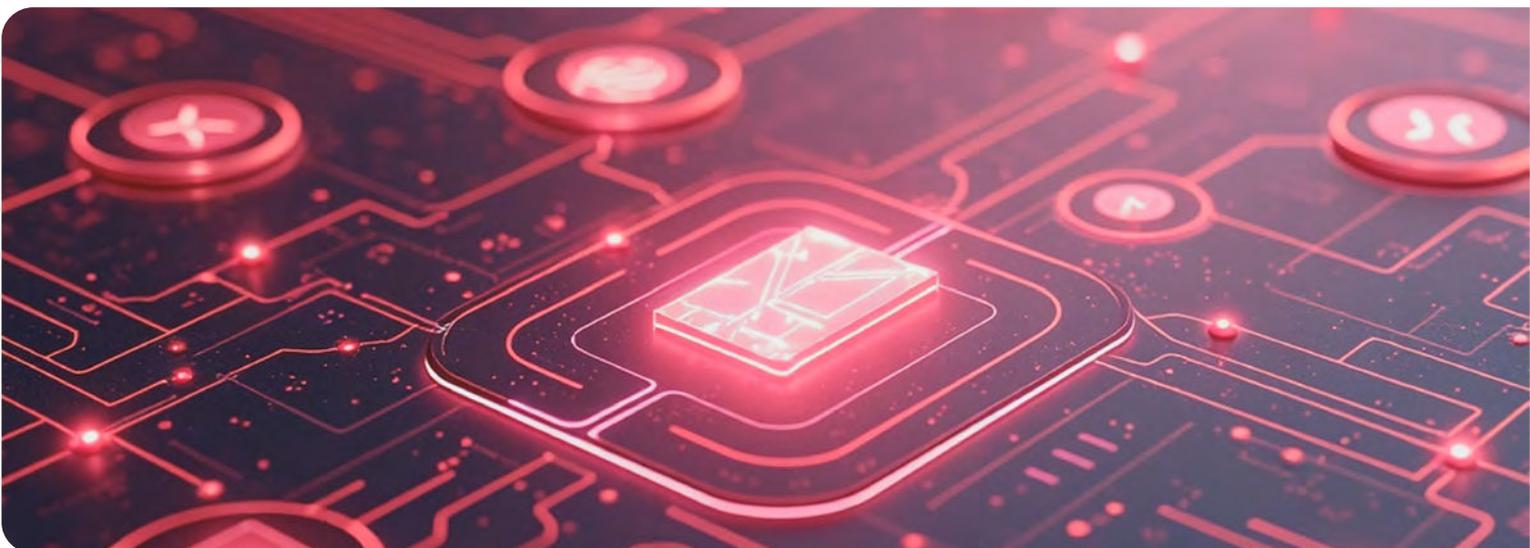


Boomi's acquisition of Rivery brings powerful Change Data Capture (CDC) capabilities into the Boomi platform—enabling users to go beyond data integration and unify application integration and API management in a single solution. Built on an ELT paradigm with log-based CDC, Rivery provides real-time, cost-efficient data syncs that feed into staging areas, not database tables—ideal for modern, scalable data architectures. Combined with Boomi's DataHub and HubGen AI, this unlocks rapid deployment of agentic AI solutions, helping enterprises make the most of their data across systems and applications.

## Change Data Capture in Matillion



Matillion is an ETL tool for cloud data warehouses. Matillion's Change Data Capture has undergone several updates with the transition to offering Matillion as a fully SaaS application. It now requires an agent to be installed to connect to the source database. Once the data is replicated, users can transform it using a graphical user interface (GUI).



# The Business Benefits of CDC Are Clear.

In today's 24/7 economy, Change Data Capture (CDC) is more of a necessity than a luxury.

To remain competitive, companies must act quickly on new data and insights. Opportunities are fleeting—especially in hyper-competitive spaces like e-commerce. Only businesses with superior data operations can capitalize on the split-second window in which customers make decisions.

CDC empowers organizations to move at the speed of their data. But beyond speed, CDC also delivers significant cost savings. There's no penalty—monetary or otherwise—for upgrading to CDC. In fact, sticking with batch processing is often more expensive and less efficient. The real cost comes from not adopting CDC.

However, CDC is more than just a single feature. It should be seen as part of a broader strategy to optimize and automate data integration. CDC is not the goal—it's a means to a goal. Whether you implement CDC using Rivery or another solution, make sure it fits into the bigger picture of your tech stack and business objectives.



## About Rivery:

Rivery is the modern way to build, manage, and monitor data pipelines. Rivery's SaaS platform provides an end-to-end solution for Ingestion, Transformation, Orchestration, and Data Operations.



### Data Ingestion

Rivery's universal support for any data source empowers you to ingest all your data in the format and frequency of your choice. Efficient data ingestion and governance begins with control over all your data sources.



### Data Transformation

Produce the data your team needs at any time in any format. Rivery's powerful transformation layer refines raw data into business-ready inputs that fuel superior insights, analysis, and decision making.



### Data Orchestration

Rivery enables your team to seamlessly connect and orchestrate all your data sources in the cloud, from both in-house and third-party platforms. Create the perfect data ecosystem, with robust, automated processes.



### Data Operations

With Rivery, data management is about more than just handling data. Rivery eliminates manual data management tasks and gives teams the power to control how they use their data, for any project, opportunity, or company.

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