

## Customer Case Study: Crowley Maritime Attains Enterprise- Wide Data Access with Precisely Connect

### Overview

Agility. Responsiveness. Innovation. Crowley Maritime, a global leader in marine solutions, vessel management, energy and supply-chain management, exemplifies just how valuable it is to focus on these goals. Since 1892, Crowley Maritime has constantly, innovated, adapted and worked hard to become the internationally respected industry leader it is today.

More than 20 years ago, Crowley Maritime moved its operations onto the IBM mainframe. Over time, the company developed and deployed hundreds of custom mainframe applications. But after two decades of rapid growth, it became increasingly clear that Crowley Maritime needed to modernize its IT, to move out to the cloud and significantly reduce dependence upon mainframe.

### Business Challenge

Moving to the cloud meant establishing a cloud-based Enterprise Service Bus architecture that could support distributed processing for analytics and reporting. That in turn meant integrating all existing applications and data. To get there, Crowley Maritime had to overcome many challenges. But one issue emerged as a major roadblock: Integrating mainframe data into the new distributed, cloud-based architecture.

The complexity, labor time, expense, and risks of directly porting decades of data and hundreds of customized mainframe applications made that approach completely unworkable. A different path to mainframe integration had to be found.

In total, Crowley Maritime's business was being run on over 300 separate mainframe applications, most of which had been developed many years earlier and could not realistically be updated or expanded. While many of those applications were handling tracking of ship and container movements, port operations and land logistics (truck, rail, etc.) were being managed on entirely separate applications. All the associated data each application generated were also stored in separate Db2 databases.

This led to many operational challenges. For example, each time a customer inquired about the status of their shipment, Crowley's customer service agents had to query as many as 17 different systems to get the answer. Compounding the issue was the fact that none of the agents involved had full visibility to all systems.

### Client Profile

- Founded in 1892
- Global leader in Marine Solutions, Energy and Logistics Services
- Over 5,000 employees worldwide
- Provides services and staffing solutions for Shipping, LNG Distribution and Port Escort operations
- Leading provider of logistics for U.S. Federal and NATO agencies

“Precisely Connect has proven to be a very valuable CDC tool, a bridge that gives previously siloed legacy mainframe data a path to our current cloud-based systems and databases.”

— Amit Mittal, Director of Technology  
Crowley Maritime

Over time, well-intended attempts to speed up responses led to creating many customized reports to run nightly against the multitude of Db2 databases, so that fewer ad-hoc queries would have to run during the day to find information. But, in the absence of formal Data Governance controls, line of business (LOB) managers, who had access to Db2, but were certainly not skilled mainframe programmers, were simply creating blunt-force “Select \* from Table” reports which then ran against 20 years of data every night.

Eventually, so many overnight reports were scheduled that mainframe MIPS were being totally consumed by the reporting, choking core business application processing and crippling Crowley Maritime’s global, 24/7/365 business.

## Solution

To overcome this costly and vexing problem, Crowley Maritime implemented Precisely Connect.

Precisely Connect provides change data capture (CDC) for mainframe, identifying and capturing changes made to Db2 databases as they occur and replicating them in real-time across relational databases, streaming frameworks, and cloud data stores.

Crowley Maritime began pulling change data from Db2 tables for delivery to its Cloudera® data lake on AWS™, via various tools such as Apache® Kafka™ and NiFi™. It then implemented Snowflake™ to further expand its reporting and analytics capabilities. Generating reports in Snowflake rather than via Db2 queries freed up mainframe processing capacity, sped up system response times and significantly lowered the cost of Crowley’s mainframe operations. With Db2 data streaming to its cloud platform in real-time, Crowley Maritime began integrating it with data from all its other applications and systems, making everything available to both its own internal teams and its customers for use in cloud-based analytics, reporting and dashboarding.

### Technology Used

- Precisely Connect

## Benefits

Crowley Maritime now enjoys a constantly updated, unified, end-to-end view of all its shipments and logistics. For some of its top accounts, this means that Crowley Maritime can deliver fully customized, highly focused, customer-centric reports via e-mail batch every two hours. Still other customers have opted to use Crowley Maritime’s fully integrated systems by developing their own dashboards in Snowflake for more real-time access.

Ultimately, implementing Precisely Connect unlocked yet another extremely valuable benefit: The ability to implement more robust data governance practices. Because Crowley IT can divide Snowflake workloads into separate data warehouses for each LOB, it can charge back costs for data storage and compute usage to the related LOBs.

With that change, department managers across Crowley Maritime also became incentivized to prioritize and streamline their compute requirements, which led them to further reduce their overall compute, storage, and reporting demands.

Precisely Connect’s ability to integrate Crowley’s mainframe data into its cloud computing platform resulted in significant overall IT expense reductions and better data governance practices by ensuring IT costs are more visible, attributable, and fairly budgeted.

“Beyond just solving our mainframe integration problem, Precisely Connect has actually allowed us to improve our Data Governance practices, to control costs and gain increased visibility into where and how data is being used.”

– Amit Mittal, Director of Technology  
Crowley Maritime