

# American Commercial Barge Line (ACBL) Takes Advantage of Serverless on AWS to Save Costs and Increase Innovation

*With Cedrus, an APN Advanced Consulting Partner and Amazon API Gateway and AWS Lambda Service Delivery Partner*

## About American Commercial Barge Line (ACBL)

As a leader in inland barge transportation, ACBL moves the grain, dry bulk, and liquid commodities relied upon by consumers, businesses, and industries every day. ACBL provides a wide array of barging solutions to meet transportation needs and the flexibility required to support its customers. With one of the nation's largest and newest inland river barge fleets, ACBL operates safe, reliable, and efficient equipment for transporting cargoes along 7,200 miles of U.S. inland waterways. With a fully integrated network, the company provides transloading, warehousing, storage, and fleeting services to support barge transportation throughout the Mississippi River System and its tributaries.

## Looking to the Future of Technology to Optimize Barge Transportation

America's rivers and canals play a central role in the health of the country's economy. Every day, thousands of tons of goods—such as grain, iron, steel, wood, and paper—are shipped and transported on American inland waterways to destinations like the Port of South Louisiana for distribution. Driving much of this transport is American Commercial Barge Line (ACBL), a leader in inland barge transportation operating along 7,200 miles of U.S. inland waterways.

"We are leaders in the unique heavy freight industry," says Bradley Harrison, development manager and lead architect at ACBL. "With a focus on dry bulk and liquid goods, we offer more of a diverse portfolio than other inland waterway barge companies."

Founded more than a century ago, the company has seen its business evolve. To efficiently run its intricate network of barges and maintain its commitment to provide support across the transportation supply chain, ACBL relies on numerous software solutions, running on premises. "We have, for example, an on-premises Oracle database that is the life and blood of the entire corporation," says Harrison. As the company's legacy infrastructure went beyond end-of-life, its software ran up against performance and compliance issues.

Running out of time with its legacy infrastructure, ACBL needed to find a new solution for hosting and managing its software. The company quickly turned to the cloud—specifically, Amazon Web Services (AWS)—and the promise of serverless computing.

## **Empowering Developers with Serverless on AWS**

Platform maturity and feature set, the partner ecosystem, and familiarity with its services led ACBL to choose AWS over other cloud providers like Azure and Google Cloud Platform (GCP). As the company sought to retire old applications in its stack, its team saw much promise in taking advantage of the AWS stack to drive new features and functionality.

For Harrison and the team, a simple lift-and-shift migration to AWS was never in the cards.

“We’re not trying to do a carbon copy of our on-premises footprint and old software,” says Harrison. “We’re trying to build the software as if it’s a new product. Core to doing that is developer empowerment. And we feel serverless is at the heart of giving our developers what they need to succeed. We want to enable developers by removing the operational burden and allowing them to own the code and the infrastructure. We don’t want to build a system requiring the management of instances or virtual machines (VMs). We wanted to remove dependencies, help our team focus on writing code and getting said code to communicate within itself, and moving forward from there.”

One of ACBL’s main goals? To modernize its VB6/Oracle application in the cloud using microservices.

## **Using the AWS Service Delivery Program to Find Experts in Serverless on AWS**

To support its journey to serverless on AWS, the team turned to the AWS Partner Network (APN). It focused the search on companies that’d gained crucial distinctions—such as Competency and Service Delivery distinctions—on AWS through the APN.

“We focused our search on finding AWS Service Delivery partners holding the Amazon API Gateway and AWS Lambda distinctions,” explains Harrison. “We also needed a partner who would demonstrate superior CI/CD pipeline expertise and could offer professional services in both AngularJS, a structural framework for dynamic web applications, and AWS. Cedrus immediately shined on both accounts.”

## **Retiring Old Applications and Taking Advantage of Managed Services on AWS**

ACBL runs a static Amazon Simple Storage Service (Amazon S3) website that hooks into a set of microservices on AWS. The company still runs its Oracle application on premises while continuously building out its presence on AWS. “We continue to take features we had on premises and re-implement them on AWS,” says Harrison.

“Today, we have AWS looking up supplemental logs from our Oracle database and pushing that data into our RDS MySQL database using DMS, Amazon Simple Notification Service (SNS), and AWS Lambda. From there, we extract, transform, and load (ETL) the data into a staging area using AWS Glue. We then use Amazon MSK to create topics and channels and push it out to all of our microservices. Those services then consume it and ingest it back into our RDS database for the data store or into DynamoDB.”

The company is also using AWS Lambda to pull in data from third-party sources—including data from the U.S. Geological Survey and The Weather Channel. This data goes through AWS AppSync, which is used predominately for what goes in and out of the company’s website. Cognito is used to control authorization for the application.

The scalability of running a serverless architecture on AWS is phenomenal," says Harrison. "Where we've gotten much of our payback is just in the fact that we aren't managing an Amazon EC2 instance; we don't have to worry about servers, because we simply don't have servers. We feel we've liberated ourselves by taking advantage of managed services and serverless compute." For an in-depth look at what ACBL is building on AWS, [check out This Is My Architecture](#).

## **Reducing Costs and Delighting Employees**

Since moving to AWS, ACBL has reduced its costs by more than 50 percent. The company has also saved its developers precious time by taking advantage of AWS services and API calls to execute routine tasks, such as invoice pulls quickly. By running a serverless architecture on AWS, ACBL can devote its resources to working on projects that add business value rather than an administrative burden.

"What we've built on AWS allows developers to think so far out of the box that there is no longer a boundary around what they can achieve," says Harrison. "Our developers have been thrilled with our move to AWS. It's very empowering, and it wouldn't have been possible to build if we didn't have access to the right APN partners like Cedrus. It's been a terrific experience.”

## **About Cedrus**

As a trusted adviser to AWS customers, Cedrus has built a team with in-depth experience in all aspects of digital transformation technologies and works with companies to help navigate leading-edge technologies, including internet of things, machine learning, and image recognition. The company helps customers with monolithic to microservices migration and the adoption of containers, serverless platforms, and cloud security.