Covered California modernizes its healthcare marketplace with Deloitte

Learn how Deloitte helped Covered California improve the agility of its CalHEERS platform by migrating to AWS.

Covered California, the largest state-based Affordable Care Act healthcare marketplace, recently modernized its CalHEERS platform to open-source, cloud-based technologies with the help of Deloitte. To improve the agility and performance of the system, which serves millions of Californians, the State of California worked with Deloitte to migrate the monolithic, on-premises system to Amazon Web Services (AWS). Through this modernization, Covered California and the California Department of Health Care Services (DHCS), its CalHEERS cosponsor, saved millions of dollars that were reinvested to boost performance and improve the consumer experience.

BENEFITS

90 SECONDS
for database recovery

10% DECREASE
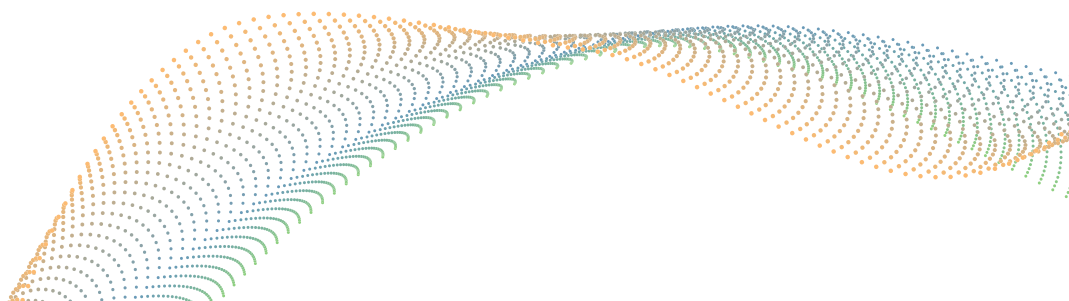in total costs

1 MONTH
to test and release features

OPPORTUNITY | Transforming IT infrastructure to support affordable healthcare

As the largest state-based health insurance marketplace in the United States, Covered California's mission is to make affordable, high-quality healthcare accessible for all Californians. Serving nearly 14 million people across the state, Covered California and DHCS rely on the CalHEERS system to determine consumer eligibility for healthcare subsidies and help consumers choose from a variety of health insurance plans.

However, the CalHEERS system was built on a monolithic architecture and hosted on premises, creating cost and scalability issues as the system evolved to deliver new capabilities and meet growing demand. "As our consumer population increased during the COVID-19 pandemic, we began to see the limits of our infrastructure," says Kevin Cornish, Chief Information Officer at Covered California. "Not only was it becoming more expensive to deliver new features, but we were also nearing the physical limits of the number of transactions that the platform could support."

Roughly 70 percent of Covered California's transactions occur during its 3-month open enrollment period, requiring the program to invest in substantial on-premises compute and storage infrastructure to support demand. However, during the rest of the year, these assets were underused. As Covered California explored a more efficient and scalable system, it looked toward the cloud. "We were very interested in the cloud's ability to scale up and down to support our dynamic transaction workload," says Cornish.

To improve consumers' online experiences, Covered California modernized its stack on AWS with the help of Deloitte. In 2019, the consulting firm won a competitive contract with the California Office of Technology and Solutions Integration to serve as the system integrator for CalHEERS. Deloitte brought its AWS experience to the role and began working to modernize the legacy CalHEERS platform using AWS.

SOLUTION | Modernizing an aging, monolithic legacy system

During the 2020 open enrollment period, Covered California experienced performance issues due to the large number of California residents seeking healthcare coverage in the first year of the COVID-19 pandemic. To support these unprecedented increases in consumer demand, Deloitte and the State of California completed a lift-and-shift migration to the cloud in 18 months.

After successful completion of the migration and seeing the benefits of the cloud, an effort to modernize the aging, monolithic legacy system began in June 2021. To avoid vendor lock-in, the teams adopted enterprise open-source technologies to perform critical functions within the CalHEERS platform. For example, they migrated the system's proprietary database to Amazon Aurora PostgreSQL, which helped set up, operate, and scale open-source PostgreSQL deployments on the cloud. The high performance and availability of the Amazon Aurora PostgreSQL database enabled the State to quickly perform critical functions such as processing eligibility for health insurance through Covered California or Medi-Cal, the state's Medicaid program.

"We are seeing amazing performance with this database," says Brian Rabe, Managing Director at Deloitte Consulting LLP. "We performed a disaster recovery simulation, which initially took 4 hours. When we adopted Amazon Aurora PostgreSQL, we saw database recovery in under 90 seconds."

The modernized CalHEERS system also incorporated Amazon CloudFront—a service that helps securely deliver content with low latency and high transfer speeds—to serve as the agency's content delivery network to reduce page load times and provide a faster, high-performance web experience for Californians. The network is protected by AWS WAF, a service that helps protect web applications from cybersecurity exploits and bots as part of the broader efforts to protect consumer information.

AWS Services Used

(Amazon RDS) for PostgreSQL   for PostgreSQL

OUTCOME | Adopting AWS services to save money and boost performance

During its cloud modernization journey, Covered California increased the size of its system by 20 percent, but despite this expansion, its costs have decreased by 10 percent. Together, Covered California and DHCS have saved tens of millions of dollars by retiring on-premises hardware and have unlocked even more millions of dollars in savings by removing proprietary licensing dependencies. Additionally, the system is much simpler to update. "We can change our user interface based on customer feedback extraordinarily fast," says Cornish. "On AWS, we can perform real-world A/B testing and release a new feature in 1 month—actions that would've taken many months prior to these investments."

This modernized stack proved critical when, during the last week of the 2024 open enrollment period, Covered California's contact center telephone systems experienced an unplanned outage. To help Californians get the health insurance that they need, the marketplace worked alongside Deloitte and the AWS team to implement a new solution using Amazon Connect, a contact center powered by artificial intelligence. "We worked over a long weekend to deploy a new contact center for 1,200 agents on AWS," says Cornish. "Thanks to our collaboration with Deloitte and AWS technology, we engineered for the unexpected and were able to continue providing critical help to California consumers."

The large-scale modernization of Covered California's system has been widely successful. The improved system has enhanced the consumer experience, helping residents access healthcare quickly and with much less stress. "The ability to be quick and nimble affects real people," says Rabe. "For example, the state requested to automate some rules for determining health insurance eligibility. With the new stack, we built this automation in 1 month. This resulted in thousands more people getting health insurance without having to complete a lot of time-consuming paperwork."

The second wave of the migration will involve adopting more cloud-based services, which will drive additional cost efficiencies for Covered California and an even better experience for California residents. As it moves forward, the agency will continue to make affordable healthcare more accessible on the cloud. "I have a 30-year career in IT, both in the public sector and in the private sector, and I've never achieved so much with so few problems," says Cornish. "That's a testament to the shared affinity for our mission between the CalHEERS team, Deloitte, and AWS."

> *"I've never achieved so much with so few problems. That's a testament to the shared affinity for our mission between the CalHEERS team, Deloitte, and AWS."*
> *—Kevin Cornish,*
> *Chief Information Officer, Covered California*