



Deloitte.

Health Insurance Marketplace in the AWS Cloud

Deloitte's client is a marketplace for affordable coverage that is open to millions of residents.

The client, a state, needed a systems upgrade, and officials expected considerable capital expense if they were to buy new on-premises hardware and software and renew the state's data center lease. State decision-makers wanted to migrate the health benefit exchange to the cloud, reducing both the capital costs to replace aging infrastructure and ongoing operational costs. A cloud environment would also provide a consistent customer experience through system load, as well as improve network security and availability. The state turned to Deloitte and Amazon Web Services (AWS).



What happened next:

With the state, Deloitte coordinated and closely collaborated with more than a dozen government stakeholders.

The enormous and complex task of transitioning system operations and enhancing the application started with a “lift and shift,” migrating the exchange as-is to the cloud. Innovation followed, in which a scalable architecture and platform running natively with the cloud replaced proprietary legacy software.

Workloads previously supported by 5,032 cores—primarily on highly engineered Oracle Exadata and Exalogic systems—were migrated to Amazon Elastic Compute Cloud (EC2). The team moved 450-terabyte production databases, including more than 20,000 internal staff accounts and 7.7 million user accounts, using AWS Snowball to Elastic Block Store, Elastic File System, and Amazon Simple Storage Service (S3) for cloud storage. The long-term cloud solution for six petabytes of federally mandated archived data

was also developed. All told, Deloitte migrated databases equivalent to six times the size of the Library of Congress digital archives.

Additionally, a dedicated network hub was created using the AWS Transit Gateway to enforce the network security boundary between production and non-production data. The hub also helped centralize the management of network traffic, access controls and traffic inspection.

The state health benefit exchange was able to keep all of its policy and user-experience functionality on track, even during unprecedented challenges posed by the COVID-19 pandemic. The state worked with Deloitte to use project management leading practices and innovative strategies to help deliver complex technical modernization in 19 months without slowing down business changes.

The numbers:

140 interface connections

for more than 41 state, federal and business partner interfaces migrated to the cloud in non-production and production environments

More than **40 million** state residents are eligible for health care coverage through the health benefit exchange

More than 500 project personnel

navigated the challenges of this project through virtual work across the world during the COVID-19 pandemic

36,000 daily users

regularly supported during open enrollment

A record **1.6 million people** actively enrolled in the health benefit exchange as of June 1, 2021, including 139,000 who signed up since lower premiums became available through the American Rescue Plan

The wins:



On time and on budget despite shifting complexities during the COVID-19 pandemic



Material increase in system performance and benefits from machine learning and automation



60 additional improvement opportunities identified from the legacy architecture and operational savings

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