Auto-Owners Insurance is a mutual insurance company founded in 1916 that offers auto, home, business, and life insurance to policyholders through independent agents. Represented by over 44,000 licensed agents in more than 6,300 agencies in 26 states, it’s the 17th-largest insurance company in the U.S. and is rated A++ (Superior) by the A.M. Best Company, a nationally recognized independent insurance rating authority. Auto-Owners is committed to maintaining its high standards of customer service, quality products, and financial security through constant technological innovation, especially as new tech-savvy competitors strive to make inroads.

Because the insurance industry is driven by data, remaining on the cutting-edge in terms of data collection and analysis is a business imperative.

“"The business of insurance is about keeping a promise to our customers to be there when they need us and we’re always looking to find new ways to analyze data and use predictive modeling to improve our customer service, underwrite policies more effectively, settle claims faster, and better match premium to risk.”"

— Eric Truax, Analytics Manager at Auto-Owners Insurance
Unique Requirements

Eric Truax, and the Auto-Owners analytics teams, were looking for a way to analyze larger, more complicated data sets than their current systems could handle. The data sets that they wanted to analyze often involved unstructured data, like photos, videos, audio files, and more. They first turned to Hadoop, but quickly found that scaling Hadoop came with lots of complications. What Hadoop couldn’t offer was the fast turnaround time they needed to stay on the cutting edge as new libraries, like TensorFlow, were constantly being released. Soon, their attention turned to Mesos because of its ability to facilitate data science and analytics using large data sets.

From there, the next step was to implement DC/OS, which offered the kind of support that a large enterprise, like Auto-Owners, required. As the team kept expanding its cluster and discovering new uses for their work around the company, the agility of DC/OS in terms of operations, development, and data began to shine through.

“We keep throwing more and more problems at DC/OS and getting more value out of it. It’s a great fit for us.”

—Eric Truax, Analytics Manager at Auto-Owners Insurance
The group presently maintains four business applications with more than a dozen supporting services attached. It’s a microservices architecture, with applications using DC/OS as the overall resource coordinator. “We have about 43 services running right now, and of course a bunch of Jupyter notebooks,” said Truax.

“As a large enterprise, we were attracted to DC/OS because of its enterprise support. We crush our cluster day in and day out as we try to solve data science and analytical problems on large data sets.”

— Eric Truax, Analytics Manager, Auto-Owners Insurance

He added that Jupyter notebooks help with collaboration and communication, freeing developers from having to look at static text documents and code and letting them embed visualizations and comments.

The team now considers itself a self-sufficient DevOps team rather than just a development team, which has turned out to be a big value proposition. “After an initial learning curve, everyone came to realize we knew what we’re doing, and we didn’t break anything important,” said Truax. “Over the past year, we’ve onboarded my entire team to our cluster which keeps the system pegged at about 80 percent capacity. The occasional bursts have underscored our need to expand the cluster resources again this fall.”

Today, the Auto-Owners suite of tools that represent 60 to 80 percent of the workload includes the Hadoop Distributed File System (HDFS) along with Jupyter notebooks. The rest is custom applications that serve up models and scale based on load.

“‘It’s a data science workload,’” said Truax. “‘You have a data source, you have a business problem, and you develop an application to solve the problem and then deploy it on DC/OS. That’s the recipe.’

Although Auto-Owners can envision eventually transitioning to a hybrid cloud deployment, today’s work is all done within an on-premise data center. For Truax, a big advantage to using their DC/OS cluster for predictive modeling is that the development group can make and deploy models to production and do some of the IT work themselves, cutting down on time to market and decreasing their reliance on other teams.
Results

With new Insurtech disruptors popping up to improve various aspects of the insurance process, established insurers, such as Auto-Owners, must respond to this new competition as soon as it appears. “That’s why our team appreciates DC/OS as a flexible and fast-moving platform,” said Truax.

Thanks to its DC/OS implementation, Auto-Owners is able to use the insights gathered from analyzing unstructured data to improve its underwriting efficiency, reduce costs, and accelerate its data science program.

Learn More

D2iQ is leading the enterprise transformation toward distributed computing and hybrid cloud portability. DC/OS is the premier platform for building, deploying, and elastically scaling modern, containerized applications and big data without compromise. DC/OS makes running containers, data services, and microservices easy, across any combination of infrastructure — datacenter, cloud, or edge — without lock-in.

“Insurance has always been data-driven, especially for pricing. Today, we are using DC/OS to make many of our core business processes like underwriting and claims handling more effective by leveraging the data we’ve captured and becoming more data-driven than ever.”

— Eric Truax, Analytics Manager, Auto-Owners Insurance