

GLOBAL ANALYTICS



SPIRE GLOBAL ENHANCES WEATHER, TRANSPORTATION SAFETY

Spire Global Inc. is one of the world's largest space-to-cloud analytics companies. Using the Ohio Supercomputer Center's (OSC) high performance computing (HPC) systems, Spire provides weather-forecasting services for the maritime and aviation industries. This is made possible by AweSim, an industrial engagement initiative of OSC.

Possessing the largest fleet of multi-purpose satellites in the world, Spire is tasked with maintaining precise and reliable data for the various customers they serve. Spire is able to fully leverage the power of data analytics to crunch their vast, near real-time stores of weather data through the access they have to OSC's resources.

The company also tracks location information of ships and planes to promote fuel conservation, route planning and inform rapid, effective responses to transportation incidents.

"Once again, I would like to stress how impressed we have been in working with OSC."

— Timothy Brown, software engineer for Spire

VIRTUAL DESIGNS. REAL BENEFITS.

In addition to these observations, Spire's satellite fleet reports weather conditions over a longer timeframe. These data contain important trend measurements, such as for soil moisture at a particular location, which aids in the prediction of droughts and forecasts about growing seasons.



LOGISTICS



THE CHALLENGE

Spire's services are provided to numerous clients around the world who all rely on dependable data to create accurate and valuable weather predictions. Each client has their own specific data needs, and many need these statistics at certain points throughout each day. Spire was searching for a way to be able to run a myriad of computations at specified points throughout the day in order to deliver analytics in a timely manner.

THE APPROACH

Through utilizing OSC's Owens Cluster and HPC storage resources, Spire gathers thousands of varying observations at specific times throughout the day, which are then fed through their proprietary system of weather models to create predictions and forecasts tailored to the needs of their clients.

THE SOLUTION

With specific compute cycles and space dedicated at OSC for Spire, the company is able to confidently deliver reliable forecasts to their clients no matter what their specific requests are for the types of data they receive and when they receive it.

"Because the data's always changing, and the weather is always changing, the models always need tweaking or to be improved," Brown said. "We gather thousands of observations per day of atmospheric conditions—pressure, temperature and humidity—to just nudge the model a little bit. By having the actual observation, the forecast becomes more valuable and accurate."