Flexible, scalable and sustainable: the new power behind tomorrow's weather predictions

overview

The world's leading weather-forecasting companies usually process weather data four times a day, which, depending on the speed of execution, can take around two hours at a time. This can be very expensive when using the cloud – resulting in companies only using cloud capacity for eight out of 24 hours, leaving a lot of downtime still to be paid for.

Tomorrow.io began their business providing world-leading weather intelligence. Their weather and climate security platform helps organizations – from Ford, Porsche and Uber to Google and Fox Sports – to predict the business impacts of weather and solve their climate security challenges. By producing business insights and action plans calibrated to a minute-by-minute forecast, they can automate decision-making at scale, helping countries, businesses and individuals better manage their weather-related challenges.

But they also had a vision to do things differently.

Shaking up the world of weather prediction

To achieve forecasting and analysis at speed and scale, Tomorrow.io needed to harness the power of high-performance computing (HPC) to run their numerical weather prediction models. As a start-up they had used the public cloud which gave them instant access together with a degree of flexibility. But as the business expanded and grew its operational and research offering, their HPC costs became increasingly expensive and more complicated to maintain; they found they were paying a premium for a service that did not always deliver what they needed, and though they considered other public cloud options, the potential for making savings proved very limited. Getting the power they needed to analyze data for the industry standard four times a day was proving an issue with Tomorrow.io needing to increase data processing time so that it became a near-constant requirement.

The team at Tomorrow.io approached atNorth to see if they could power their next phase of research and development (R&D) more cost-effectively. They wanted to change the rules of weather forecasting, analyzing data on a constant basis in real-time to provide on-the-spot calculations that would allow their high-end clients to make business-critical decisions with confidence.

As a meteorological organization with a strong focus on environmental, social and governance (ESG) issues, Tomorrow.io was attracted by atNorth's cloud capabilities, but also by their sustainable, renewable energy-powered data centers, and their commitment to circular economy principles. Keenly aware of their carbon footprint and ready to minimize it wherever possible, Tomorrow.io were looking for a solution that would not only save money for their clients but would also be good for the planet.

Having a lower price and better performance from a sustainable source is a win-win situation.

We are a growing company with massive scale as our goal.

One of the consequences of this is that we run large jobs for our customers that can eat away at our margins. atNorth offers us an excellent solution at a discount so we can scale as an organization and pass the cost savings to our customers. Having a lower price and better performance from a sustainable source is a win-win situation. We love the cost savings as well as the sustainability, and so do our clients.

Luke Peffers
Chief Weather Officer, Tomorrow.io

Creating sustainable growth

Taking advantage of atNorth's efficient data center hosting facilities and HPC services has allowed Tomorrow.io to develop at scale, run complex calculations over extensive geographical areas in real time and incorporate more AI ability into their precision platform, as well as continuing with R&D testing for future applications. Using atNorth's infrastructure, Tomorrow.io have reduced their HPC costs by more than 60% compared to other leading on-demand cloud HPC providers and will continue to accelerate savings as the company ingests additional data from the weather satellite constellation planned to launch in late 2022.

A powerful partnership

Relying on atNorth's sustainable HPC solutions has helped Tomorrow.io to deliver great results to their customers and build a framework for the future. They have been able to focus on their calculations, simulations, and performance, while atNorth provides availability, reliability, and scalability. They have been able to focus on clear outcomes, without worrying about the underlying HPC infrastructure. It's one of the reasons why they are continuing to attract top clients such as the U.S. Airforce and Amazon Alexa's weather app, Big Sky.

What started as a supplier-client relationship is fast evolving into a strong partnership where atNorth works with Tomorrow.io to drive and support their success, and in turn help their customers to become more climate resilient.

How can atNorth help you?

We help our customers push the boundaries of compute solutions to deliver increased efficiency and performance with a lower environmental impact. We offer predictable performance you can count on, combined with quick reaction times, full scalability and 24-hour service when needed. As you evolve, we work with you, helping to fine tune your R&D to optimize software. By thinking together and matching our services to yours we can help you secure fast, reliable results.

atNorth works closely with the customers' scientists in the development phase of their next generation models to provide the best HPC architecture and performance to move groundbreaking boundaries of how weather modeling can be optimized.

On the other hand, we build together the optimal HPC cluster to achieve the best operational environment balance for weather modelling at scale as well as periodic models.

To find out more, get in touch at:

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