



The power behind Opera's partnership with atNorth

Building a world-class supercomputer for the future of web browsing.



[Opera](#) is at the forefront of developing user-centric internet browsing software to build the best online experiences and bring new products to market – from web browsers and gaming to interactive AI-driven news platforms and shopping solutions. As part of this, the need to innovate at speed and scale is critical for Opera. In 2023, the organization embarked on a new journey to meet the growing demand for AI integration, requiring investment in a state-of-the-art infrastructure capable of managing increasing technical needs.

Key considerations for building a sustainable, AI-ready infrastructure

To keep pace with digital transformation and increasing user demands, Opera set out to build a supercomputing cluster that could facilitate the most advanced AI models and applications. This required an infrastructure capable of developing Large Language Models (LLMs) and facilitating generative AI applications, which necessitated access to high density compute that not every data center could handle in the way that Opera needed.

With a longstanding history of working together, Opera turned to the atNorth team to explore data expansion with a list of must-haves, including high-density capacity, energy efficiency, cost-effective performance and a sustainable footprint. [atNorth's ICE02](#) site stood out in terms of what it could offer Opera as the company started to transform its AI cluster into a truly extraordinary supercomputer.

As an NVIDIA-Certified™ and an NVIDIA DGX™ ready data center partner, atNorth's ICE02 site was an easy decision for Opera – the combination of atNorth and NVIDIA was a perfect match. atNorth's ICE02 site provided an optimized environment for AI deployment and seamless integration across NVIDIA's AI Enterprise software platform. Utilizing the NVIDIA DGX SuperPOD™, Opera could run mixed workloads, including both training and inference jobs, on the cluster, supporting high density scalability to support Opera's ambition to bring AI-powered features to market more quickly and reliably. Today, the Opera Iceland KEF-1 supercomputer currently ranks among the [top 150 most powerful supercomputers](#) in the world and was charted as the [88th most powerful](#) when it first went online.

atNorth's ICE02 site comprises of 13,750 square meters of white space, with ample rack space and the ability to support more than 80MW of capacity. To ensure longer-term scalability, this was a key consideration in choosing the right data center partner. Opera's selection was also based on other critical factors including competitive pricing, short lead times for deployment, high power density of 21kW/rack with the ability to provide three stable, independent power lines per rack. By housing the data cluster with atNorth, Opera can support current high density demands as well as future proof its IT business with a centralized hub for high performing computational tasks that can scale and evolve in line with data needs and AI demand. To this end, building one of the most advanced supercomputers was not just focused to the performance and capabilities of the IT stack. For Opera, sustainability is woven throughout the organization and remains an important priority.

How Iceland KEF-1 stands out in numbers:

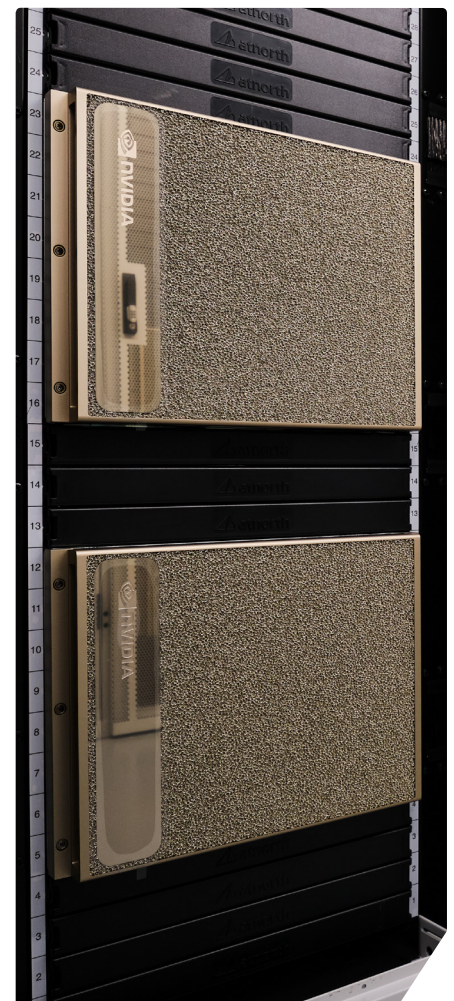
Operational in just 6 months

4x faster AI training models and 30x faster on LLMs

Reduced time to market and powered by renewable energy

PUE of 1.2 versus a global average of 1.56

High power density of 21kW per rack with 3 independent power lines



Opera Supercomputer at atNorth's ICE02 mega site

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Nordic benefits - minimizing the environmental impact

This supercomputer has been designed to minimize its impact on the environment – atNorth's location in Iceland couldn't be better suited to this, with its abundance of hydroelectric and geothermal power for energy and cooling. Data center facilities in Iceland, and the other Nordic countries, benefit from a cool and more consistent climate. This ensures that temperature and humidity levels within the data centers are maintained more efficiently, reducing energy outputs and ultimately decreasing carbon emissions. Iceland also has an abundance of low carbon hydroelectric and geothermal power which negates the need for power intensive air conditioning systems and enables highly energy efficient and cost-effective air cooling of the computer equipment.

High expectations yield high performance

Opera's data cluster, based on the NVIDIA DGX SuperPOD™, features 31 NVIDIA DGX™ H100 systems powered by 248 NVIDIA H100 Tensor Core GPUs, which can function up to four times faster with AI training models and 30 times faster on large language models. This has allowed Opera developers to create new features and generative AI experiences for users with significantly reduced time to market.

By housing its AI infrastructure at atNorth's ICE02 site, Opera not only met existing high-density demands, but also significantly reduced the time traditionally associated with IT operations. Shrinking the time needed for AI Model training and response generation from LLMs helped developers and engineers create AI-driven features much more efficiently, in a fraction of the time to continue to provide a best-in-class user experience.

For Opera, a core part of delivering the best user experience is ensuring this sustainable responsibility at every juncture. atNorth's ICE02 site brought additional benefits in helping to reduce Opera's carbon footprint. The Power Usage Effectiveness (PUE), which is a standard efficiency metric for power consumption in data centers, measures just 1.2 at atNorth's ICE02 site compared to a [global average of 1.56](#). This has equated to a significant reduction in carbon usage and energy consumption for Opera and has directly aligned with the company's sustainability agenda.



ICE02 team supporting Opera



When Opera was looking for a data center partner to house our new supercomputer, atNorth provided an AI-ready site with the rack space corresponding to power capacity needed. This, combined with second-to-none customer service, ensured our new cluster was operational in just six months. atNorth's highly energy efficient campus also benefits from an abundance of renewable energy that has enabled us to decarbonize our infrastructure. atNorth's team has been nothing but exceptional - everything they deliver is of the highest quality.

Michał Tarnawski

Global Director of IT, Opera

A superb supercomputer in action: fueling innovation

With the new cluster in place at ICE02, Opera could immediately begin building out its offering, adding generative AI features to the browser. Soon after the supercomputer was in place, Opera launched Aria, a unique browser AI chatbot system to support and enhance users' online experiences. This has become extremely important to the Opera business and the future of AI innovation within its browser.

With the flexibility, scalability and superior performance of ICE02, Opera has been able to pioneer new use cases and ways to bring innovative features like Aria to market to moving user demand. Leveraging the capabilities of atNorth's ICE02, this collaboration truly demonstrates how cutting-edge infrastructure can push the boundaries of innovation. Opera has not only accelerated its AI ambitions but also set a new standard for what a modern browser can achieve, ensuring it remains at the forefront of the industry and continues to drive the future of online experiences.



At atNorth, our ICE02 data center is designed to support cutting-edge innovation for forward-thinking companies like Opera. By providing high-performance, AI-ready infrastructure, ICE02 accelerates time to market for groundbreaking features such as Opera's Aria browser AI. All of this is delivered with a focus on sustainability – enabling Opera to push the boundaries of digital experiences while maintaining a responsible environmental footprint.

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