

# AI and HPC hosting powered by renewable energy from Verne Global and Intel

Verne Global offers high-performance computing (HPC) infrastructure that is powered by 100% renewable energy sources. Together with Intel, Verne Global can help you cut costs and support your climate objectives while offering the latest HPC advances to your customers.

## Key takeaways

1. Verne Global is changing the way enterprises host workloads with data centers running on 100% renewable energy.
2. Verne Global offers HPC and AI infrastructure with high-speed, reliable connections to Europe and North America.
3. 4th Generation Intel® Xeon® Scalable processors and Intel® Acceleration Engines can increase HPC efficiency and performance.
4. Verne Global offers very low total cost of ownership (TCO) for high-intensity workloads and very high customer satisfaction with a 100 NPS score.

VERNE GLOBAL

## Summary

Cut costs and help meet carbon reduction goals for AI with HPC hosting from Verne Global on 4th Generation Intel® Xeon® Scalable processors.

## Responsible AI and HPC hosting

The high-performance computing (HPC) market continues to expand. Driven by inexhaustible demand for scientific computing and artificial intelligence (AI), and by use cases such as machine learning (ML) analytics and large-scale simulations, organizations depend on HPC workloads more than ever.

Verne Global and Intel are collaborating to meet this demand while helping organizations reduce costs and meet their [climate impact objectives](#) as well. Verne Global offers a data center infrastructure with purpose-built HPC environments at a low TCO. With Intel® Xeon® Scalable processors, Verne Global's customers can also improve the performance, efficiency, and value of their HPC and AI initiatives.



## Addressing the tradeoffs of HPC

The cloud market has no shortage of providers offering ubiquitous access to standard computing resources that meet the needs of occasional traffic overruns and low-intensity business workloads. HPC and AI workloads, however, have unique demands that go far beyond what public cloud providers typically offer.

In order to accommodate the latest use cases and maximize their value, HPC environments need to achieve a high level of density and must combine multiple technology elements. This need for specialized designs is why most HPC workloads are on owned servers. The resulting energy consumption can drive up IT costs, impacting carbon footprint and potentially holding organizations back from meeting objectives related to sustainability.

## The right place and the right climate

When it comes to building environmentally friendly, cost-effective computing infrastructure, location matters. Outsourcing data infrastructure to a provider who only has access to expensive, carbon-intensive electricity doesn't address the problems that enterprises face with HPC and AI.

Verne Global delivers best-in-class HPC data center infrastructure running on renewable energy.

Verne Global realized this problem more than a decade ago when it established its first data center in Iceland. This enables Verne Global to offer computing infrastructure powered by 100% renewable energy. The cost of this type of energy is not only lower than that produced by fossil fuels, but also more stable and predictable, which improves long-term cost predictability and operational confidence.

The cold average temperature of the Nordic environment also enables ambient air cooling to dramatically reduce the energy costs and requirements of Verne Global's HPC installations. And while Iceland's weather can be frigid, it rarely leads to extreme conditions that could threaten continuity for Verne Global. In fact, Verne Global has an impeccable record for reliability, with zero minutes of unplanned downtime for customer-facing infrastructure.

Verne Global's has a growing footprint in Northern Europe that takes advantage of exceptional connectivity in this region. Connections to the UK, Europe, North America, and beyond are more than fast and responsive enough to accommodate complex applications.

## A collaboration that improves customer experiences

Partnerships are a critical component of delivering HPC infrastructure. These systems are complex, and customers have a variety of different needs, use cases, and strategies. Some host their entire IT infrastructure with Verne Global, while others host specialized workloads as part of hybrid strategies. In each case, the right expertise and solutions are required to achieve optimal performance, scalable capabilities, and repeatable results.

Organizations will be most successful when they position themselves in a service partner and data center ecosystem with access to the infrastructure, space, and power they need for the long term, along with the specialized service and support they need to innovate. Also, an application-centric approach to IT planning enables companies to more effectively realize the benefits of hybrid IT architectures. It will open the doors to scaling the use of public cloud technology and the cost-effective use of emerging data technologies at significant scale.

Verne Global hosts a number of specialized service partners from key manufacturers. They provide on-site support for the most demanding customers. Verne Global's operations team complements in-house IT departments and service provider teams. Through close collaboration with Intel, the world's leader in data center compute and innovation, Verne Global is able to target hardware for certain workloads and deliver performance that scales over generations.

Verne Global also maintains high-security standards with exceptional physical security at its campuses. Data hosted with Verne Global is protected with built-in security measures on Intel Xeon Scalable processors.

## Meeting the latest demands in AI and HPC

Powered by Dell PowerEdge Servers featuring the latest Intel® Xeon® Gold 6458Q CPU, Verne Global offers state-of-the-art data center hosting services ranging from a single rack to ultra-high-density pods that meet multiple megawatt requirements and support highly scalable applications.

Due to its locations and purpose-built facilities, Verne Global is able to offer exceptional compute power using free air cooling, which can support up to 50 kilowatt (kW) installations.

Many high-intensity use cases require more power, so Verne Global and Intel have developed a case for 4th Gen Intel Xeon Scalable processors that's ready for liquid cooling. This means that when customers need more power, Verne Global can easily implement liquid cooling and support over 100 kW on a single rack.



Verne Global's Iceland HQ.

“Verne Global is committed to exceeding our customers’ goals and expectations with purpose-built data center solutions for high intensity compute, powered by 100% renewable sources with exceptional customer service. We consider it our mission to help solve the world’s toughest challenges with the fewest possible tradeoffs. Partnering with Intel, we can change the way the world thinks about HPC.”

– Alex Picchietti, Vice President, Alliances & Partnerships, Verne Global

## Cut costs and improve results with 4th Gen Intel Xeon Scalable processors

Verne Global is integrating the latest 4th Generation Intel Xeon Scalable processors which offer built-in accelerators that can dramatically speed up HPC and AI workloads and other processes. [Intel® Advanced Vector Extensions 512 \(Intel® AVX-512\)](#) and [Intel® Deep Learning Boost \(Intel® DL Boost\)](#) accelerate AI workloads without needing to incorporate discrete hardware into the infrastructure.

HPC installations are typically quite dense, employing a large number of cores. [Intel® Dynamic Load Balancer \(Intel® DLB\)](#) enables the efficient distribution of network processing across multiple CPU cores, to maximize available compute power while reducing the energy needed. Data analytics in financial services or medical research can require very large in-memory data sets. [Intel® In-Memory Analytics Accelerator \(Intel® IAA\)](#) increases the queries per second that can be performed, thereby reducing the memory footprint for analytics workloads.

Containerized applications can lose performance due to cryptography. By enabling [Intel® Quick Assist Technology \(Intel® QAT\)](#) on 4th Generation Intel Xeon Scalable processors, Verne Global’s customers can enhance the capability and productivity of containerized applications. Intel QAT accelerates encryption, decryption, and data compression, and offloads them from the processor core which helps reduce system resource consumption.

4th Generation Intel® Xeon® Scalable processors offer **up to 10x higher inference and training performance** than the previous generation.<sup>1</sup>

### Learn more

- [Learn more about 4th Gen Intel® Xeon® Scalable processors](#)
- [Read more about Verne Global and its data centers](#)

## Embrace the renewable approach to HPC

Intel and Verne Global are powering your journey to sustainability. By partnering with Verne Global and Intel to host HPC workloads, organizations can enjoy the benefits of dedicated systems, while also reducing the burden on their IT facilities and cutting carbon emissions.



<sup>1</sup>5.7x to 10x higher PyTorch real-time inference performance on 4th Gen Intel Xeon Scalable processor with built in Intel AMX (BF16) vs. prior generation (FP32). See [A17] at: <https://edc.intel.com/content/www/us/en/products/performance/benchmarks/4th-generation-intel-xeon-scalable-processors/>. Results may vary.

Intel technologies may require enabled hardware, software or service activation.

No product or component can be absolutely secure.

Your costs and results may vary.

Intel does not control or audit third-party data. You should consult other sources to evaluate accuracy.

Performance results are based on testing as of dates shown in configurations and may not reflect all publicly available updates. No product or component can be absolutely secure.

© Intel Corporation. Intel, the Intel logo, Xeon and other Intel marks are trademarks of Intel Corporation or its subsidiaries. Other names and brands may be claimed as the property of others.

© 2023 Intel Corporation 0124/SB/CAT/PDF ♻️ Please Recycle 358130-001EN