Smarter doesn’t sacrifice energy efficiency or sustainability for higher performance

Leading the world in liquid cooling technology for more than a decade

A decade ago, we were challenged to deliver an energy efficient supercomputer. Today, Lenovo Neptune™ liquid cooling technologies help solve humanity’s greatest challenges the world over.

A revolution at the time, it answered the challenge of creating a supercomputer that delivered groundbreaking power while maintaining energy efficiency. The result was the first ever water cooled x86 server installation, that spent the better part of a decade on the TOP500 supercomputing list.

As demand for system performance grows across an increasing number of industries, practical applications for this technology continue to expand.

Neptune™ enables performance without compromise

**Sustainability**
Meet environmental goals and align with carbon reduction initiatives without sacrificing the ability to deliver the compute power your organization needs to compete and thrive.

**Density**
Neptune™ delivers more computing power in a compact footprint to support your most demanding workloads.

**Competitive edge**
Whether your organization is competing for faster time-to-market, scientific breakthroughs, or research grants, benefit from super-efficient high-performance computing that delivers results more quickly.

Run hot, stay cool, save energy

Designed to run the highest core-count, highest frequency, latest generation processors from AMD, Intel and, NVIDIA, Lenovo Neptune™ direct warm water-cooled systems power through the most compute-intensive workloads.

| 95%+ Heat removal efficiency | 40% Lower power consumption |

Lenovo Neptune™ Liquid Cooling delivers whisper quiet high performance with lower power consumption in a compact footprint so you can achieve higher density and more output from your data center.
Gain a **performance** advantage

Breakthrough discoveries require breakthrough technologies. Engineering, modeling and simulation workloads, and even animation in movies require compute power at peak performance. Lenovo Neptune™ has already delivered a proven advantage in these sectors:

- Fintech, algorithmic trading and dev environments where frequency matters
- Computer aided engineering and computational fluid dynamics (CAE/CFD)
- Electronic design automation (EDA)
- Weather and climate modeling and forecasting
- Bioinformatics
- Geospatial and energy
- Physical and earth sciences research
- Animation render farms

**Meet Lenovo’s Neptune™ cooling technologies**

<table>
<thead>
<tr>
<th>Rack Water Cooling</th>
<th>Keep heat down in the rack with either a Rear-door Heat Exchanger (RDHX) and In-rack Cooling Distribution Units (CDU).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Direct Water Cooling</td>
<td>With <strong>Full Systems</strong> and <strong>Core Systems</strong> available, water removes heat from key components - including power supplies for completely fanless operation.</td>
</tr>
<tr>
<td>Liquid Assisted Cooling</td>
<td>With either a <strong>Thermal Transfer Module (TTM)</strong> or <strong>Liquid to Air Heat Exchanger (L2A)</strong>, traditional air cooled systems benefit from liquid cooling with specially designed heat handling, without added plumbing.</td>
</tr>
<tr>
<td>Energy Aware Runtime Software (EAR) and xClarity Energy Manager</td>
<td>By optimizing power states, turning off unused components, and routing workloads to the most efficient resources, our software helps deliver optimal performance at the lowest possible energy consumption.</td>
</tr>
</tbody>
</table>

**Why choose Lenovo for your most demanding computing needs?**

We believe Lenovo provides the best high performance computing solutions in the market, a belief that is backed up by the facts.

- Lenovo is the **world’s #1 supercomputer provider** according to TOP500.org
- #1 on the Green500 list, we built the world’s most energy efficient supercomputer
- Still #1 in x86 server reliability and leader in server benchmark performance worldwide
- Gartner Global Supply Chain Top 10 – global capability to deliver fully integrated factory tested solutions
- Multiple HPCwire awards
- Deep partnerships with leading software vendors mean we can deliver engineered, pre-optimized, tested and certified IT solutions that are high performance, scalable and cost-effective
- Open, reliable, and **secure platforms with seamless integration**

**Performance + efficiency + sustainability... Lenovo Neptune™**

**Want to know more?**

**Discover Lenovo Neptune™ online**, reach out to your Lenovo representative or get in touch with us by clicking the link below and you’ll be contacted within 2 business days.