About HLRS

The High-Performance Computing Center Stuttgart (HLRS) was established in 1996 as Germany's first national high-performance computing center. It is a research institution affiliated with the University of Stuttgart and a founding member of the Gauss Centre for Supercomputing, the alliance of Germany's tier-0/1 supercomputing centers.

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AMD

Contact Us

High-Performance Computing Center Stuttgart
University of Stuttgart
Nobelstraße 19
70569 Stuttgart, Germany

+49 (0) 711-685-872 69
info@hlrs.de

www.hlrs.de

University of Stuttgart
Germany

GCS
Gauss Centre for Supercomputing

H L R S
High-Performance Computing Center Stuttgart

HUNTER

A major step toward exascale computing in Stuttgart

How Hunter is used

Simulation using high-performance computers is an important tool for advanced research across many domains in science and engineering. Users of Hunter address complex problems in fields such as computational fluid dynamics, weather and climate modeling, biomedical research, and materials science, among many other fields in which simulation, artificial intelligence, and visualization can offer unique insights.

Hunter is also used by industry – including startups and small and medium-sized enterprises – as well as public sector agencies, providing secure access to powerful resources for high-performance computing and artificial intelligence.

About Hunter

Hunter is HLRS's newest flagship supercomputer. Based on the HPE Cray EX4000 platform from Hewlett Packard Enterprise, it is a world-class high-performance computing system that enables large-scale, state-of-the-art applications of simulation, artificial intelligence, and data analytics, including hybrid computing approaches that combine diverse methods into powerful workflows.

Hunter marks a milestone for HLRS, as it moves away from the center's previous CPU-oriented approach to make greater use of GPUs. At its core is the AMD Instinct™ MI300A accelerated processing unit (APU), which combines CPUs, GPUs, and high-bandwidth memory in a single package. The technology offers fast data transfer speeds, impressive performance, easy programmability, and great energy efficiency. Hunter is 50% faster than its predecessor, Hawk, while slashing energy requirements at peak performance by approximately 80%.

HLRS conceived Hunter as a transitional system that will enable system users to prepare for its upcoming exascale supercomputer, Herder. Hewlett Packard Enterprise will also manufacture that future next-generation system, whose installation is scheduled to begin in 2027.

Technical details

Platform	HPE Cray EX4000
HPL Performance HPCG Performance	APU: 27 PFlop/s (FP64) APU: 350 TFlop/s (FP64)
Processor types	APU Node: AMD Instinct MI300A CPU Node: AMD EPYC 9374F
Number of processors	APUs: 752 MI300A CPUs: 512 AMD EPYC 9004
Number of nodes	APU: 188 CPU: 256
Memory technology	APU: 512 GB HBM3 (~5.3 TB/s) CPU: 768 GB DDR5-4800
Storage	Cray ClusterStor E2000 25 PB capacity on 2120 disks
Networking	HPE Slingshot 11 Dragonfly (APU: 4 × 200 Gbps per node)
Energy usage (average)	560 kW
Start of operation	Early 2025