

CASE STUDY

Portable Cluster by Nor-Tech

When information flows too fast to be processed, the solution isn't to slow it down... but to compute faster.



Shock absorbers line the chassis, keeping the system protected from sudden impact as well as sustained vibration.



Operates with standard power! Run up to 96 CPU cores on just 2 115VAC 20-amp circuits.



The Challenge

Researchers in the field of fluid dynamics studying the complexities of a liquid flow can already acquire data from their experiments at extremely high speeds. However, the flow of information tends to bottleneck while processing. Using Time-Resolved Stereo Particle Image Velocimetry (TRSPIV), which seeds a flow with laser-illuminated particles, scientists can see the entire 3D structure of the flow, allowing for more intricate measurements of vectors and velocity.

The researchers at a major university in Utah needed an instrument that could acquire, rapidly process and store the substantial samples generated by the TRSPIV. The system would need to be relatively self-sufficient, performing these tasks without distracting users from their experiments. Furthermore, this particular set-up would be utilized by multiple departments on more than one campus, so mobility was also a very important factor.

The trickiest part of the challenge, however, was finding the energy to run such a system... literally. The slickest system in the world would be useless if it couldn't operate within the power constraints of the institution, and in this case it was 2 standard circuits.

The entire Portable Cluster can be packed up and easily moved by a single individual. The lightweight, but heavy-duty chassis features sturdy castors that roll smoothly over even rough terrain.

The Solution

Nor-Tech designed and configured a portable, personal cluster that operates within the energy restrictions of a simple fluid dynamics lab. Supporting a capacity of 52 cores, the system runs easily on a single 110VAC 20-amp circuit (or up to 96 cores on two 110VAC 20-amp circuits.)

The complete 15U high-performance, personal cluster is entirely mobile and contained in a ruggedized, shockmounted chassis. The Cluster can be packaged in minutes and shipped anywhere around the campus, country or even world.

