As the HPC industry moves toward a hybrid computing model to meet the increasing demands for higher performance, Rogue Wave is keeping pace by providing support for GPU parallel processors, specifically for the NVIDIA® CUDA® parallel computing platform.

NVIDIA calls attention to the entire software ecosystem that has developed around the CUDA parallel computing platform—software applications, libraries, programming language solutions, and service providers.

Support for CUDA in Rogue Wave’s TotalView debugger is a standard feature of TotalView for Linux-x86-64, and includes the following:

- Debugging host and device code in the same session
- CUDA running directly on Tesla™, Fermi or Kepler hardware
- Full visibility to the hierarchical device, block, and thread memory
- Navigating device threads by logical and device coordinates
- Debugging CUDA functions on the stack and inline
- Applications that use multiple NVIDIA devices at the same time
- MPI applications on CUDA-accelerated clusters

With support for NVIDIA CUDA, TotalView provides debugging at the cutting edge of GPU development. It supports developers who are taking advantage of CUDA features, such as sharing GPUs across multiple threads, and faster multi-GPU programming with unified virtual addressing. Debugging with TotalView provides intuitive control of GPU device kernel threads and a straightforward graphic display of CUDA exceptions, with a clear representation of GPU device memory types for all CUDA variables.

TotalView supports CUDA on the Cray XK6 platform and can also be used with the OpenACC capability that is included in Cray Compiler Edition (CCE) compilers. Users can step into parallel regions, set breakpoints on regions that have been offloaded to the GPU and view variables that are part of those regions.

“Accelerated systems are becoming the new standard for the HPC industry, as supercomputing centers look for better solutions to meet ever-increasing performance, price and power demands,” said Duncan Poole, president of the OpenACC standards group, at NVIDIA.

“TotalView gives developers and computational scientists intuitive control of either explicit device kernel threads or those created from OpenACC programs, making it easier to harness the power of these new architectures.”

“By supporting the latest release of CUDA, TotalView continues to set the standard in HPC debugging. We’ve been hearing from customers working on CUDA code that TotalView allows them to work twice as fast as they could with other techniques.”

Chris Gottbrath, Principal Product Manager at Rogue Wave Software

Developing parallel, data-intensive applications is hard. **We make it easier.**