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## Study by Avetec's DICE Program Shows Advancement in High Performance Computing Data Transfer With Longbow™

### NASA's Goddard Space Flight Center and Lawrence Livermore National Lab to Join DICE SCinet Research Sandbox at Supercomputing 2010

SPRINGFIELD, OH--(Marketwire - October 27, 2010) - Dr. DK Panda, professor of computer science with The Ohio State University's Department of Computer Sciences, has released preliminary study results that show significant advancement in researchers' ability to send high performance computing data with Obsidian's Longbow(TM) InfiniBand range-extension, routing and encryption products. The study, funded by Avetec's DICE Program and a grant from the Department of Energy (DOE), showed that with Longbow encryption data can be received as much as 50 times sooner than using equivalent software encryption.

Building on previous studies from Dr. DK Panda's team that established Longbow's ability to create low latency optical links, the study characterized Longbow E100's ability to deliver InfiniBand performance over long distances while providing high-grade encryption and authentication.

"In the pursuit of performance, supercomputing has so far largely ignored security concerns," said Tracey Wilson, program manager for DICE. "As high performance cloud computing emerges, it will be increasingly critical for data to move long distances both swiftly and securely."

AES-192 encrypted 4X SDR links were systematically compared with unencrypted links and TCP/IP connections over 10 gigabit Ethernet protected by IPSEC software running on state-of-the-art Intel Nehalem processors. While papers containing the full technical results and analysis will be forthcoming, some key findings from running socket-level MPI latency tests over short distances include:

- Longbow encrypted InfiniBand links continue to be stable and transparent
- For small messages (< 64 bytes), Longbow latency is less than 50% of Intel/ IPSEC latency
- For large messages (> 16 kbytes), Longbow latency is less than 2% of Intel/ IPSEC latency
- For all message sizes, enabling Longbow encryption had less than 1% impact on latency and throughput numbers

"The Longbow E100 has been found to indeed deliver uncompromised InfiniBand performance over distance while also providing industry standard cryptographic protection against data interception or cyber attack," said Dr. DK Panda.

Longbow E100s will underpin the multiple Wide Area Network links of the DICE SCinet Research Sandbox demonstration at SC10 in New Orleans from November 13-19, 2010. The DOE's Lawrence Livermore National Laboratory in California, NASA's Goddard Space Flight Center in Maryland and Avetec in Ohio will all be connected to the SC10 show floor by a variety of Longbow-powered connections providing secure 10 and 40 Gbit range-extended InfiniBand services.

DICE independently evaluates hardware and software solutions for enterprise and government with the goal of helping organizations save critical resources and time. DICE helps organizations in high performance computing and IT focus their resources on technology investments for critical challenges; optimize quality, performance and functionality; correct issues before deployment, reduce risk and cost, test alternatives prior to launch; enhance product and technology validity and marketability; and accelerate product release. For additional information on the DICE program, visit <http://diceprogram.org/>.

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