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JOINT PROJECT BETWEEN JACKSON STATE UNIVERSITY AND U.S. ARMY CORPS OF ENGINEERS USES FIRST INFINIBAND-BASED SRC-7 CLUSTER

SRC Reconfigurable Computing System Will Aid Technology Advances for Science and the U.S. Military

COLORADO SPRINGS, Colo. – March 24, 2009 – SRC Computers, LLC, a recognized leader in general purpose reconfigurable computing, has announced that Jackson State University (JSU), Jackson, Mississippi, has installed an SRC-7 cluster system in support of a joint research project between JSU and the U.S. Army Engineer Research and Development Center (ERDC). The system being used in the JSU – ERDC joint research project is the world's first Infiniband-based SRC-7 MAPstation cluster, with each node having the performance of hundreds of microprocessors. The system consumes 90 percent less power than a microprocessor-based cluster and is easily capable of scaling to tens of thousands of nodes.

Dr. Khalid Abed, a faculty member in the Department of Computer Engineering at JSU, is the principal investigator on this research effort, which deals with accelerating scientific applications with high performance reconfigurable computing (HPRC). "Microprocessor-based HPC clusters are facing formidable challenges such as run time performance, memory bottlenecks, floor space, and power dissipation. HPRC is emerging as a new research area that may provide solutions to some of these challenges. The SRC-7 system will allow us to investigate how to map complex parallel codes onto HPRC clusters." Professor Abed further noted, "Reconfigurable supercomputers allow researchers to reconfigure the hardware for different computing applications to achieve optimum performance for such applications instead of running different types of applications on a fixed supercomputer."

Dr. Gerald Morris, a computer scientist at the ERDC Department of Defense (DoD) Supercomputing Resource Center (DSRC), who is the Government technical lead on the project, believes that SRC advances in reconfigurable computing may have a considerable impact on the program. "A significant benefit of this system is the SRC Carte Programming Environment. Carte allows the development of hardware-based computational kernels using either high-level languages like C or Fortran or hardware description languages like VHDL or Verilog." Dr. Morris added, "Carte abstracts away some of the underlying design details. This is particularly important when trying to map floating-point applications onto reconfigurable hardware, which is still a challenging research area."

Jon Huppenthal, President and CEO of SRC Computers, said, "This system is built using the same commercial off-the-shelf (COTS) modules that we have qualified for airborne use, making it an ideal choice for military applications. We're very proud that our systems are being used to advance our country's military capabilities."

About JSU

Jackson State University, one of the Historically Black Colleges or Universities (HBCU), is a public institution of higher learning located in the metropolitan area of Jackson, Mississippi. JSU is committed to excellence in teaching and research, and The Carnegie Foundation designates it as a research university with high activity RU/H. JSU educates a diverse student population from Mississippi, most other states, and many foreign countries by providing a broad range of baccalaureate programs and a variety of masters and doctoral programs in its six Colleges: Business; Education and Human Development; Liberal Arts; Lifelong Learning; Public Service; and Science, Engineering and Technology. JSU is strategically committed to excellence in engineering education and research. In January 2009, JSU completed construction of a new School of Engineering building (90,000 square feet) at the cost of about $22 million, indicating a strong commitment to engineering education. JSU's School of Engineering Web site address is www.jsums.edu/~sst/cset/engineering.htm.

About ERDC

ERDC is the research and development organization for the U.S. Army Corps of Engineers with more than 2,000 employees, $1.2 billion in facilities, and an annual research program exceeding $1 billion. ERDC conducts research in both military and civilian mission areas for the Department of Defense and the nation with laboratory facilities in four states. The ERDC Web site address is www.erdc.usace.army.mil.

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About SRC

SRC Computers, LLC, is a recognized leader in general purpose reconfigurable computing and offers powerful programmer-friendly servers, workstations, and embedded systems. Established in 1996 by legendary computer architect Seymour Cray, SRC has developed the IMPLICIT+EXPLICIT Architecture that allows its products to provide orders of magnitude increases in performance over conventional microprocessor-based systems. In addition to its headquarters in Colorado Springs, Colorado, SRC also maintains a software development facility in Minneapolis, Minnesota. IMPLICIT+EXPLICIT, Carte, and MAPstation are trademarks or registered trademarks of SRC Computers, LLC. All other trademarks and registered trademarks are the property of their respective owners. The SRC Web site address is www.srccomputers.com.

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