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## **RESEARCHERS AT DRI RELY ON CRAY XD1 SUPERCOMPUTER TO UNRAVEL ENVIRONMENTAL MYSTERIES**

### **Cray System Dramatically Increases Earth-Science Simulation Capabilities**

SEATTLE, WA, May XX 2005 — Global supercomputer leader Cray Inc. (Nasdaq NM: CRAY) today announced that Nevada's Desert Research Institute (DRI) has chosen the Cray XD1™ supercomputer as a key computational platform for carrying out environmental research that involves high-resolution modeling and complex forecasting. By delivering superior performance and processing scalability, DRI's 60-processor Cray XD1 system will help investigators find solutions to pressing issues related to the earth's atmosphere, soil, hydrology and ecosystems.

The Cray XD1 system was purchased with an award from the U.S. Defense University Research and Instrumentation Program given to Dr. Darko Koracin, principal investigator and a research professor at DRI. Dr. Koracin specializes in studying and predicting atmospheric flows and the transport and dispersion of airborne pollutants and tracer substances over complex terrain and oceans by developing and using high-resolution meteorological, dispersion and air-quality models and other computer-based tools. These models can be employed in studies ranging from pollution control and bio-warfare to energy production, weather modification and air-sea interaction.

#### **Advanced Atmospheric Studies**

“The Cray XD1 supercomputer greatly strengthens the numerical modeling capabilities that make it possible for us to simulate atmospheric, dispersion, and air-quality processes as part of our ongoing and future Department of Defense projects,” said Dr. Koracin. “For example, the Cray XD1 system's processing power will let us integrate transport modeling systems into forecasting and short-term ‘nowcasting’ systems, so we can predict the impact of events such as chemical emissions or biological plumes on surrounding communities.”

“The Cray XD1 system will also give us the ability to map the wind-energy potential in Nevada and California through all four seasons at a resolution of two kilometers or less,” Dr. Koracin added. “We will be able to use computationally intensive numerical techniques such as large-eddy simulations to predict turbulence and dispersion down to the scale of individual urban and suburban areas.”

“The DRI installation further confirms the rich potential that the Cray XD1 supercomputer holds for earth-science research,” said Per Nyberg, Cray’s Earth Sciences Business Manager. “With its exceptional performance characteristics and scalability that outstrips systems of similar size, the Cray XD1 system can deliver the computational power that the earth-sciences community demands, while also meeting budgetary requirements. Cray XD1 supercomputers have also been installed at the USDA Forest Service’s Fire Sciences Laboratory in Montana and at the Alfred Wegener Institute for Polar and Marine Research in Bremerhaven, Germany.”

### **Top Benchmark Results**

Before making their choice, DRI tested a Cray XD1 system along with two other platforms: a ccNUMA system equipped with Intel Itanium 2 1.3 GHz processors and a high-speed interconnect, and a PC cluster using Intel Xeon 2.8 GHz processors and a Gigabit Ethernet interconnect. The benchmark tests were conducted using PSU/NCAR atmospheric simulation modeling software, known as MM5. To assess the scalability of each system, the number of processors was increased in increments of four, up to 32 processors in the case of the ccNUMA system and 24 processors for the PC cluster.

The benchmarks showed that the Cray XD1 system performed 17–25% faster than the ccNUMA system and 50–75% faster than the PC cluster, depending on the number of processors. “Based on the benchmark results, the price/performance ratio of the Cray XD1 system is far better than that of the ccNUMA system,” said Domagoj Podnar, a research computer scientist at DRI. “The ratio was closer for the PC cluster, but that solution presented too many drawbacks given the mission-critical tasks we wanted to accomplish with the machine.”

### **About the Cray XD1 Supercomputer**

The Cray XD1 supercomputer combines direct-connect system architecture, HPC-optimized Linux, management and reconfigurable computing technologies to deliver exceptional performance on real-world applications. Purpose-built for demanding HPC applications such as computational chemistry, environmental forecasting and CAE, the Cray XD1 system lets users simulate, analyze and solve complex problems more quickly and accurately. The x86-based Cray XD1 system supports a broad range of 32- and 64-bit HPC applications on AMD Opteron™ single- or dual-core processors. The Cray XD1 system also provides application acceleration capabilities using FPGA technology, tightly connected to the direct-connect structure.

### **About Cray Inc.**

As the global leader in HPC, Cray provides innovative supercomputing systems that enable scientists and engineers in government, industry and academia to meet both existing and future computational challenges. Building on years of experience in designing, developing, marketing and servicing the world's most advanced supercomputers, Cray offers a comprehensive portfolio of HPC systems that deliver unrivaled sustained performance on a wide range of applications. Go to [www.cray.com](http://www.cray.com) for more information.

### **About the Desert Research Institute**

DRI is an autonomous division of the University and Community College System of Nevada employing approximately 440 faculty and staff. With main campuses in Las Vegas and Reno, DRI represents a unique blend of academia and entrepreneurship, combining basic research in the earth sciences with applied interdisciplinary studies. At any given time DRI researchers are engaged in some 100 projects focusing on environmental monitoring, assessment, prediction and policy implementation. Go to [www.dri.edu](http://www.dri.edu) for more information.

**Safe Harbor Statement**

This press release contains forward-looking statements. There are certain factors that could cause Cray's execution plans to differ materially from those anticipated by the statements above. These include the successful porting of application programs to Cray systems, the successful passing of acceptance tests and reliance on third-party suppliers. For a discussion of these and other risks, see "Factors That Could Affect Future Results" in Cray's Annual Report on Form 10-K for the year ended December 31, 2004, filed with the Securities and Exchange Commission.

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