IDC - Press Release

Related Links

Press FAQ

Contact Press Relations

IDC Announces New Winners of HPC Innovation Excellence Awards

18 Jun 2012

HAMBURG, Germany, June 18, 2012 -- International Data Corporation (IDC) today announced the third round of recipients of the HPC Innovation Excellence Award at the 2012 International Supercomputing Conference (ISC'12) in Hamburg, Germany. Prior winners were announced at ISC'11 and at the SC'11 supercomputing conference in the U.S.

The HPC Innovation Excellence Award recognizes noteworthy achievements by users of High Performance Computing (HPC) technologies. The program's main goals are to showcase return on investment (ROI) and scientific success stories involving HPC; to help other users better understand the benefits of adopting HPC and justify HPC investments, especially for small and medium-size businesses (SMBs); to demonstrate the value of HPC to funding bodies and politicians; and to expand public support for increased HPC investments.

"IDC research has shown that HPC can greatly improve ROI and scientific advancement. The award program aims to collect a large set of success stories across many industries and application areas," said Chirag Dekate, research manager, High Performance Computing at IDC. "The winners achieved clear success in applying HPC to greatly improve business ROI, scientific advancement, and/or engineering successes. Many of the achievements also directly benefit society."

Winners of the first two rounds of awards, announced in June and November of 2011, included 10 organizations from the U.S., three from the People's Republic of China, and one from India.

The new award winners and project leaders announced at ISC'12 are as follows (contact IDC for additional details about the projects):

- **GE Global Research (U.S.).** By leveraging the advancements in available computational power, GE was able to model the unsteady flow physics in a turbine test rig. Previously, only the steady flow physics could be modeled. By comparing the results of the new unsteady calculations with previously obtained steady calculations, new insights into the flow physics – not captured with steady CFD – were obtained, such as better understanding of wake dynamics. These understandings can be used by aerodynamic engineers to improve aerodynamic efficiency which will result in reduced engine fuel burn. Each year approximately $200 billion worth in fuel is consumed globally on GE's gas turbine products, both aircraft engines and land-based gas turbines used for the production of electricity. Every 1% reduction in fuel consumption therefore saves the population of users of these products over $2 billion year. Project Leader: Richard Arthur
- **Department of Defense High Performance Computing Modernization Program (U.S.).** The Computational Research and Engineering Acquisition Tools and Environments (CREATE) program, a multi-year program to develop multi-physics based software for the design of ships, air vehicles, and antennae, applied HPC physics-based simulation to develop a standard process to generate the aerodynamic data that supported air-worthiness certifications for small unmanned aerial vehicles (UAVs). The data generated through computational methods as part of this effort also helped mitigate risk in the flight certification process by providing engineers with sound data with which to make more informed airworthiness assessments. Several UAV platforms have relied on this HPC-driven framework to gain approval, including RAVEN, AEROSTAR, and EXDRON. Without HPC resources, airworthiness decisions for small UAVs could not meet this turnaround time. This approach saved a conservative estimate of more than $1.2 million. With continued use of this program, the economic impact of this technology will continue to improve. Project Leader: John E. West
- **Mary Bird Perkins Cancer Center and Louisiana State University (U.S.).** Researchers at the centers performed clinical trials in silico that would have been prohibitively expensive and taken longer to conduct with traditional methods. The center used an HPC-driven approach to inform clinical and health policy decisions. The in silico clinical trials compared the effectiveness of multiple therapy options, leading to better-informed clinical decisions. Simulation of therapy equipment resulted in savings of more than $100 million in infrastructure costs and over $12 million in research costs while enabling rapid advancements in cancer care research. Project leader: Wayne D. Newhauser
- **Aon Benfield Securities, Inc. (Canada).** Aon has developed the PathWise platform, which uses GPU-based high performance computing to enable quantitative analysts to quickly and easily express financial application kernels such as Monte Carlo simulations using domain-specific interfaces. The computational capabilities offered by the GPU-driven HPC enabled quantitative analysts to accelerate financial computations from days to minutes, with 50-100 times throughput over conventional techniques. The PathWise platform from Aon Benfield achieved an average 90% cost savings both in terms of HPC infrastructure costs and time-to-market, translating to several millions of dollars in savings. Project leader: Peter Phillips, Amir Mohammed
- **BGI Shenzhen (China).** BGI has developed a set of distributed computing applications using a MapReduce framework to process large genome data sets on clusters. By applying advanced software technologies including HDFS, Lustre, GlusterFS, and the Platform Symphony MapReduce framework, the institute has saved

more than $20 million to date. For some application workloads, BGI achieved a significant improvement in processing capabilities while enabling the reuse of storage, resulting in reduced infrastructure costs while delivering results in less than 10 minutes, versus the prior time of 2.5 hours. Some of the applications enabled through the MapReduce framework included: sequencing of 1% of the Human Genome for the International Human Genome Project; contributing 10% to the International Human HapMap Project; conducting research in combating SARS, and a German variant of the E. coli virus; and completely sequencing the rice genome, the silkworm potato genome, and the human gut metagenome. Project leader: Lin Fang

"Innovations like this year's award winners, from around the world and across the spectrum of technical computing, create a heart beat which feeds scientific discovery and commercial innovation, pressing the boundaries of the possible for us all. Intel salutes them for taking part in advancing the state of the computing art," said Rajeeb Hazra, vice president, Intel Technical Computing Group.

"The Council on Competitiveness would like to congratulate all the winners of the HPC Innovation Excellence Award and thank all of those who submitted entries. The significance of HPC to the private sector will only be fully appreciated when examples such as these are recognized for their economic value," said Dr. Cynthia McIntyre, senior vice president for the HPC Initiative at the Council on Competitiveness.

IDC welcomes award entries from anywhere in the world. Entries may be submitted at any time by completing the brief form available at https://www.hpcuserforum.com/innovationaward/. New winners will be announced multiple times each year. Submissions must contain a clear description of the dollar value or scientific value received in order to qualify. The HPC User Forum Steering Committee performs an initial ranking of the submissions, after which domain and vertical experts are called on, as needed, to evaluate the submissions.

HPC Innovation Excellence Award sponsors include Adaptive Computing, Altair, AMD, Ansys, Appro, Avetec/DICE, the Boeing Company, the Council on Competitiveness, Department of Defense, Department of Energy, Ford Motor Company, Hewlett Packard, HPCwire, insideHPC, Intel, Microsoft, National Science Foundation, NCSA, Platform Computing, Scientific Computing, and SGI.

The next round of HPC Innovation Excellence Award winners will be announced at SC12 in November 2012.

About IDC

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications, and consumer technology markets. IDC helps IT professionals, business executives, and the investment community to make fact-based decisions on technology purchases and business strategy. More than 1,000 IDC analysts provide global, regional, and local expertise on technology and industry opportunities and trends in over 110 countries. For more than 48 years, IDC has provided strategic insights to help our clients achieve their key business objectives. IDC is a subsidiary of IDG, the world's leading technology media, research, and events company. You can learn more about IDC by visiting www.idc.com.

Contact

For more information, contact:

Chirag Dekate
cdekate@idc.com
+1 508-395-8391

Steve Conway
sconway@idc.com
+1 612-381-6939

Earl Joseph
ejoseph@idc.com
+1 612-812-5798

Michael Shirer
press@idc.com
508-935-4200

IDC Corporate USA
5 Speen Street
Framingham, MA
01701
+1.508.872.8200