

HPC User Forum Update

Cancer Computer: Computing for the Cure

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IN THIS UPDATE

The HPC User Forum was established in 1999 to promote the health of the global HPC industry and address issues of common concern to users. In September 2019, the 73rd HPC User Forum took place at the Argonne National Laboratory, in Lemont, Illinois. This update summarizes a presentation from that meeting entitled, *Cancer Computer, Computing for the Cure* given by Roy Chartier, Founder and CTO of Cancer Computer.



Cancer Computer

Computing for the Cure

A social enterprise dedicated to accelerating cancer research with high performance computing

<http://www.cancercomputer.com> Info, email:
hope@cancercomputer.com. V1.1 April ©2016 Cancer
Computer

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Source: Cancer Computer and Hyperion Research, 2019

PRESENTATION: CANCER COMPUTER, COMPUTING FOR THE CURE GIVEN BY ROY CHARTIER, FOUNDER AND CTO OF CANCER COMPUTER

Roy Chartier, founder and CTO of Cancer Computer began by thanking the HPC User Forum organizers for letting him come speak about Cancer Computer, noting his organization is an all-volunteer social enterprise. Cancer Computer takes charitable good will from individuals, corporations, foundations, and volunteers to provide additional computing resources for cancer researchers in Canada, the US, and, more recently, Japan. They help cancer researchers who may have limited funding, HPC resources, or HPC expertise. Chartier noted that they help in terms of workflow or analytics, and they also help researchers who might be waiting on institutional resources to become available - often times these waits can become quite lengthy.

FIGURE 1

“The cure for cancer will be found in the mountains....mountains of big data.”

Eric Schadt, Chair, Department of Genetics and Genomic Sciences at Mount Sinai School of Medicine

“The front line in the global war on cancer is being fought and will be won inside a computer.”

David Agus, Professor of Medicine and Engineering at the University of Southern California

“As a biologist and as a supercomputing expert, I salute the work of Cancer Computer and look forward to the results of their work.”

Craig Stewart, Associate Dean, Research Technologies, Indiana University, Executive Director, Pervasive Technology Institute

Source: Cancer Computer and Hyperion Research, 2019

Chartier noted that Cancer Computer has gone from an idea to processing a fair amount in four years. Chartier filed for non-profit status in Canada in May 2015, and they acquired a charitable registration with the Canada Revenue Agency in March 2017. They have ten volunteers and two industry advisors.

Currently, Cancer Computer has access to roughly 660 servers representing about 12,000 cores in operation for cancer research at ten collocation facilities, with the potential to reach 12 by the end of 2019. Three such facilities are in US universities: University of Illinois, Indiana University, and University of Utah, along with two in Canadian universities: Queen’s and McGill.

- Any additional work, if there is anything available, goes on the Open Science Grid, where Cancer Computer currently supports 11 projects. They also have eight projects on XSEDE. Anything left over that’s opportunistic they try to contribute to IBM’s project, the World Community Grid, and Rosetta@home.

FIGURE 2



Source: Cancer Computer and Hyperion Research, 2019

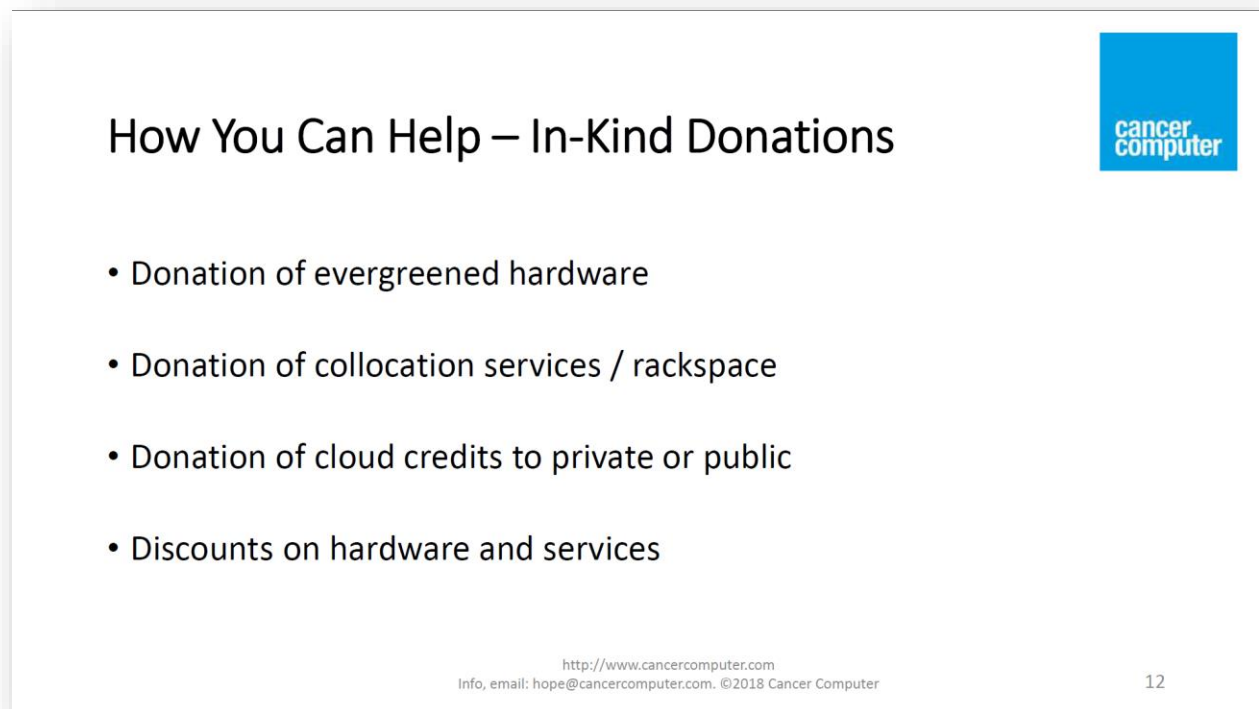
Looking forward, Chartier noted that Cancer Computer is seeking to become a service provider with XSEDE. They want to scale up their own compute cloud into graphical instances and start offering workflow assistance and, at some point, analytics. They are starting to get a fair amount of monetary donations and will soon be able to start hiring staff. They are looking to Europe in 2020 and maybe Asian in 2021.

Chartier notes that he always “comes out begging.” Typically, how Cancer Computer operates is that they ask for everything. They get donations of evergreened hardware, which is their big major source for compute capability. Oftentimes they will get collocation companies or telco’s that give them a rack or two. Amazon, Azure, other cloud providers also give them some cloud credits. Sometimes they will get discounts from vendors on hardware. Cancer Computer often gets funds from corporations and employee-matched donations, corporate donations, employer-matched, and even individual donations.

Chartier noted that Cancer Computer has a number of large funds and foundations that are about to give them money, but those sources are interested in seeing actual results in the near-term. People also like to honor those lost to cancer, so Cancer Computer servers and clusters that are named after individuals.

Finally, Chartier expressed his thanks and hopes to be partners with anyone who might choose to be part of his social enterprise to help cure cancer.

FIGURE 3



The slide features a white background with a blue header area containing the 'cancer computer' logo. The main title is 'How You Can Help – In-Kind Donations'. Below the title is a bulleted list of four items: 'Donation of evergreened hardware', 'Donation of collocation services / rackspace', 'Donation of cloud credits to private or public', and 'Discounts on hardware and services'. At the bottom of the slide, there is a URL 'http://www.cancercomputer.com', contact information 'Info, email: hope@cancercomputer.com. ©2018 Cancer Computer', and the page number '12'.

Source: Cancer Computer and Hyperion Research, 2019

To find out how to help, go to www.cancercomputer.com/

For more information or to view this and other presentations given at HPC User Forums dating back to 2008, visit www.hpcuserforum.com.

About Hyperion Research, LLC

Hyperion Research provides data driven research, analysis and recommendations for technologies, applications, and markets in high performance computing and emerging technology areas to help organizations worldwide make effective decisions and seize growth opportunities. Research includes market sizing and forecasting, share tracking, segmentation, technology and related trend analysis, and both user & vendor analysis for multi-user technical server technology used for HPC and HPDA (high performance data analysis). We provide thought leadership and practical guidance for users, vendors and other members of the HPC community by focusing on key market and technology trends across government, industry, commerce, and academia.

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