The Task Force on Cluster Computing (TFCC)

TFCC 2002 - Annual Report
November 1st 2002
(Activities over the last year)

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TFCC Co-Chairs

1. Introduction

The TFCC has continued to build on its previous success. Over the last year, the TFCCs three main events: ClusterXY, CCGridXY an GridXY have been hugely successful and continue to attract high class submissions and delegates from around the world. The TFCC has also given its support to a number of smaller workshop, that in themselves have been successful and have helped build up the support of the task force. The TFCCs book donation programme continues to run and we have distributed various publications to our less well off colleagues around the world. The TFCCs Web site has recently been revamped in order to reflect the task force as a dynamic and contemporary effort. In addition, we have also updated and reformatted the TFCCs bi-annual newsletter in order to keep its membership up to date with it activities and future events. The following sections of this report detail particular activities that the TFCC has been involved in and with over the last year.

2. Web Presence

The TFCCs Web site was redesigned in the fall of 2002. The TFCCs home page is http://www.ieeetfcc.org. There are three mirror sites at:

- o AU: http://www.csse.monash.edu.au/~rajkumar/tfcc/
- o UK: http://dsg.port.ac.uk/~mab/tfcc/
- o US: http://www-unix.mcs.anl.gov/~buyya/tfcc/

3. Major TFCC Sponsored Conferences and Events

3.1 International Conference on Cluster Computing

3.1.1 Steering Committee:

- o Mark Baker, University of Portsmouth
- o Bill Blake, Compaq Corp.
- o Giovanni Chiola, University of Genoa, Italy
- o Jack Dongarra, University of Tennessee, USA
- o Geoffrey Fox, Indiana University, USA
- o Al Geist, Oak Ridge National Lab, USA
- o Rusty Lusk, Argonne National Lab, USA
- o Paul Messina, Caltech, USA,
- o Greg Pfister, IBM, USA
- o Wolfgang Rehm, Technical University of Chemnitz, Germany
- o Thomas Sterling, Caltech/JPL, USA,
- o Rick Stevens, Argonne National Lab, USA
- o Thomas Stricker, ETH, Switzerland
- o Barry Wilkinson, University of North Carolina, USA
- o Satochi Matsuoka Tokyo Institute of Technology, Japan
- o Daniel S. Katz, JPL, USA
- o Rajkumar Buyya, University of Melbourne
- o William "Bill" Camp, Sandia National Lab, USA
- o Pete Beckman, Argonne National Lab, USA

3.1.2 Events

IEEE International Conference on Cluster Computing (Cluster 2002)
http://www-unix.mcs.anl.gov/cluster2002/
23 – 26. September 2002, Chicago, USA
General Chairs: Daniel Reed, NCSA, USA and Mark Baker, University of Portsmouth, UK
Papers received: 116 (45 accepted as full papers and 12 as posters)
Attendees: approx 300

IEEE International Conference on Cluster Computing (Cluster 2003)
http://www.csis.hku.hk/cluster2003
1 - 4. December 2003, Hong Kong
General Chairs: Jack Dongarra, University of Tennessee at Knoxville, USA and Lionel Ni, The University of Hong Kong.

3.2 International Conference on Cluster Computing and the Grid (CCGrid)

3.2.1 Steering Committee

o   Mark Baker, University of Portsmouth, UK
o   **Henri Bal, Vrije Universiteit, Holland**
o   Rajkumar Buyya (coordinator/chair), Melbourne University, Australia
o   **Franck Capello, CNRS, France**
o   Toni Cortés, Universidad Politecnica de Catalunya, Barcelona, Spain
o   Jack Dongarra, University of Tennessee, USA
o   Ian Foster, Argonne National Laboratory, Chicago, USA
o   Wolfgang Gentzsch, Sun Microsystems, Palo Alto, USA
o   Hai Jin, University of Southern California, USA
o   Craig A. Lee, The Aerospace Corporation, Los Angles, USA
o   Satoshi Matsuoka, Tokyo Institute of Technology, Japan
o   George Mohay, Queensland University of Technology, Brisbane, Australia
o   Alexander Reinefeld, Konrad-Zuse-Zentrum, Berlin, Germany
o   Albert Zomaya, University of Western Australia, Perth, Australia

3.2.2 Events:

2nd IEEE/ACM International Symposium on Cluster Computing and the Grid (CCGrid 2002)
http://ccgrid2002.zib.de | http://www.ccgrid.org/ccgrid2002
May 21-24, 2002, Berlin, Germany
General Chairs, Alexander Reinefeld, ZIB and Humboldt-Universität, Berlin, Germany and
Klaus-Peter Löhr, Freie Universität, Berlin, Germany
Papers received: 108 (26 accepted)
Attendees: approx 250
Associated Workshops on Emerging Topics: 6

3rd IEEE/ACM International Symposium on Cluster Computing and the Grid (CCGrid 2003)
http://www.ccgrid.org/ccgrid2003/ | http://ccgrid2003.apgrid.org/
May 12-15, 2003, Toshi Center Hotel, Tokyo, JAPAN
General Co-chairs, Sangsan Lee (KISTI, Korea) and Satoshi Sekiguchi (AIST, Japan)
Associated Workshops on Emerging Topics: 7

3.3 Grid Workshop

3.3.1 Steering Committee:

o   Mark Baker, University of Portsmouth, UK
o   Rajkumar Buyya, Monash University, Australia
o   Craig Lee, The Aerospace Corporation, USA
o   Manish Parashar, Rutgers University, USA
o   Heinz Stockinger, CERN, Switzerland

3.3.2 Events

2nd International Workshop on Grid Computing. http://www.gridcomputing.org
Monday November 12, 2001, Denver, Colorado, held in conjunction with
Supercomputing 2001 (SC2001) http://www.sc2001.org
Workshop Chair: Craig A. Lee, The Aerospace Corp., USA.
Proceedings are published by Springer-Verlag as Volume 2242 in the LNCS Series.

http://www.springer.de/cgi-bin/search_book.pl?isbn=3-540-42949-2
Paper: 28 submitted (16 papers accepted)
Funding: SC $2000 towards publication
Numbers that attended: 130.

3rd International Workshop on Grid Computing, http://www.gridcomputing.org
Monday 18th November 2002, Baltimore, MD held in conjunction with Supercomputing 2002
Program chair: Manish Parashar, Rutgers, The State University of New Jersey
Proceedings are being published by Springer-Verlag. The best 6 papers in the workshop's focus area of Grid Applications will be chosen for journal-length papers in a special issue of the International Journal of High Performance Computing Applications to be published in early 2003.
Paper: 78 submitted (22 full paper and 6 short papers accepted)
Funding: NSF $5000 towards publication
Numbers that attended: 130.

1. Book Donation Program

http://www.ieeetfcc.org/edupromote.html

Over 1000 books have been donated to the TFCC who under its Book Donation Programme have passed these onto to University faculties all over the world. This programme is in co-operation with many international publishers and authors.

We are currently going through the process of donating 130 copies of:

W. Gropp, D. Reed, M. Baker, R. Pennington, M. Brown, and R. Buyya (editors). "The Proceedings of the 2002 IEEE International Conference on Cluster Computing". ISBN 0-7695-1745-5, IEEE Computer Society Press, Las Alamos, CA, USA, 2002. http://www.computer.org/cspress/CATALOG/pr01745.htm

2. TFCC New (Bi-annual) Letter – April-Oct and Nov-March issues

http://www.clustercomputing.org/

The TFCC Newsletter has been reorganised substantially since the beginning of this year. It separates contents into departments or sections. Readers can find up-to-date TFCC and cluster computing-related information in the Newsletter's TFCC News section. We would like to expand may aspects of the newsletter, ensuring that it provide a useful service, offering all sorts of pointers and links to Web-accessible information on cluster computing.

Newsletter editor: Frank Sommers of Autospaces in conjunction with USC Database Systems Laboratory
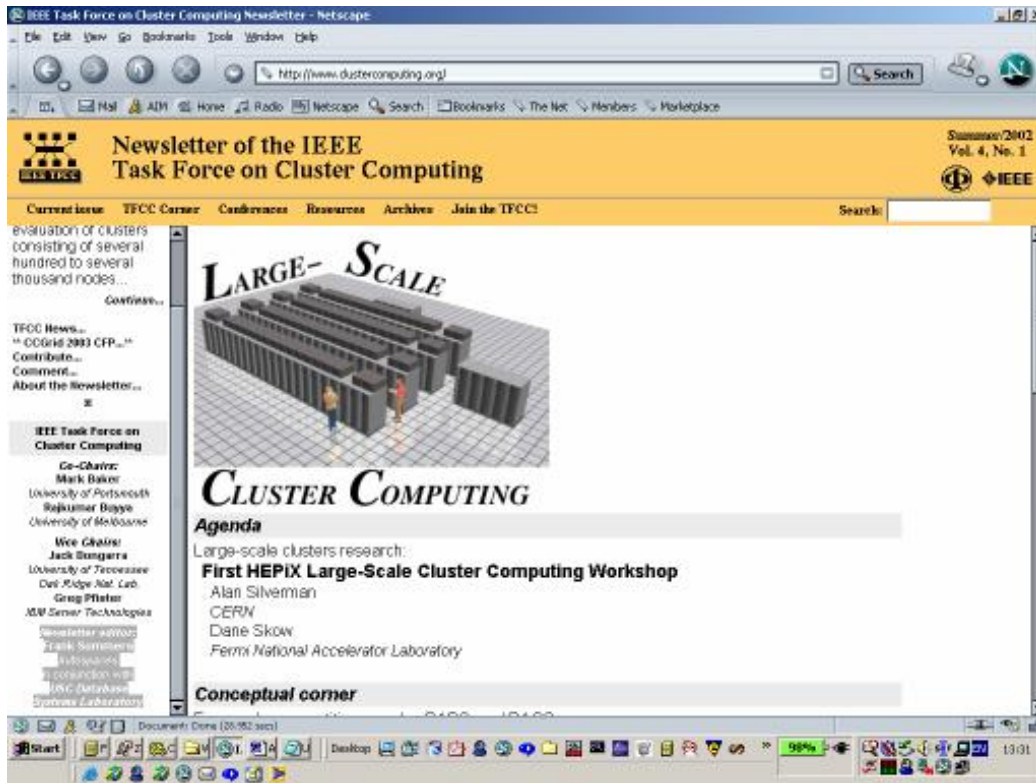
Figure 1: Cover page for TFCCs Summer 2002 Newsletter.

3. ACM/LANL CoRR and TFCC – Cluster Computing Archive

http://www.ieeetfcc.org/ClusterArchive.html

The Computing Research Repository (CoRR) on Cluster Computing is an initiative of the TFCC in collaboration with the ACM, the Los Alamos e-Print archive, and NCSTRL (Networked Computer Science Technical Reference Library). The aim of the CoRR e-Print Archive is to promote science and technology by providing an information repository that is accessible to colleagues all over the world. This Internet-based digital library has been mirrored in many countries to enable faster access to wealth of information.

This archive operates as part of the subject area know as "Distributed, Parallel, and Cluster Computing" and is moderated by Rajkumar Buyya (University of Melbourne) and Tushar Chandra (IBM). Since the starting this Archive program in 2001, a number of articles on Cluster and Grid Computing have been submitted.

4. TFCCs International Presence

The TFCC have extended their regional activities by inviting new regional representative to co-ordinate regional activities. Each of these co-ordinators maintains their own TFCC regional Web sites. Table 1 list our regional co-ordinators.

Africa	Yinong Chen, University of the Witwatersrand, South Africa
Australia	Hong Shen, Griffith University, Brisbane

Canada	Harjinder Sandhu, York University, Toronto
China	Hai Jin, ,HUST, China ; Uni of Souther California, USA
Europe	Wolfgang Gentzsch, Genias Software, Germany
Hong Kong	Cho-Li WangHong Kong University, HK
India	Srigurunath Chakravarthi,MPI Software Technology India, Bangalore and R. K. Shyamasundar, Tata Institute of Fundamental Research, Bombay
Israel	Orly Kremien, Bar-Ilan University, Israel
Japan	Yutaka Ishikawa, Real World Computing Partnership
Middle-East	Shahriar Shahhoseini, Iran University of Science and Technology
South America	Ricardo Bianchini, Federal University of Rio de Janeiro, Brazil
Thailand	Putchong Uthayopas, Kasetsart University, Bangkok
Taiwan	Chung-Ta King, National Tsing Hua University, Hsinchu
USA	Amin Vahdat, Duke University

Table 1: TFCC Regional Co-ordinators

5. TFCC Awards

Awards were presented to William Gropp (ANL), Ivan Judson (ANL) for their outstanding efforts with the organisation and management of Cluster 2002 recently held in Chicago.

Barry Wilkinson, University of North Carolina at Charlotte, USA, Education Co-ordinator, TFCC, 1999 to-date. The Citation Reads: For outstanding contributions to the IEEE Task Force on Cluster Computing (TFCC) education program and for leadership in promoting cluster computing education by organising and teaching cluster computing workshops.

6. New Volunteers

We appointed a new News Letter editor (Dr. Frank Sommers) who has been doing outstanding job. He has created an excellent cluster computing news portal (see http://www.clustercomputing.org/). It not only features TFCC news, but also publishes short articles in cluster computing written by experts in the field.

7. TOP500 and TFCC Initiative on World's TopClusters List

http://www.TopClusters.org

The TFCC initiated in collaboration with the organisers of the TOP500 (www.top500.org) supercomputers to develop a similar list for clusters. In addition to numerical benchmarks, we are looking into other parameters such as System I/O, Web, Database, and Application level performance for clusters. Recently this portal has been rebranded as "Clusters @ TOP 500" and offers a wealth of information on leading trends in cluster computing and hot news.

8. TFCC Oriented Talks and Tutorials

- o Hot Topics in Network Computing, Australasian Computer Science Week 2001 Conference (ACSW 2001), Gold Coast, Australia, Jan. 28-Feb.2, 2001.
- o Middle East/North Africa (MENA) Summer School for young scientists on parallel, distributed, mobile, and Internet computing theory, methods, applications, and research directions, hosted by The Centre for Advanced Mathematical Sciences American University of Beirut, Lebanon, 8-19 July 2002

9. TFCC Membership

- Over 65 members are registered members with the CS directly.
- 53 on the TFCC – Open Discussion Forum (as of Oct 2001)

10. Future Activities

We are planning to start student chapter on Clusters and Grid in early 2003. We feel that this is an important activity that will help develop future leaders in these fields. Currently we are soliciting ideas from TFCC members and others about how to establish and manage this activity.

If the TFCC manages to gain status as a Technical Committee then a range of changes will need to be made to the structure and working of the current effort. One of our first activities will be to establish an interim executive committee, adopt a charter and start advertising our new presence and activities.

11. Summary

The TFCC is now in the late part of its fourth year of existence. CS membership of the TFCC has nearly doubled over the last year, and its own mailing list membership has increased by 20%.

The TFCC sponsors three main events per year, *the International Conference on Cluster Computing, the International Conference on Cluster Computing the Grid, and the International Workshop on Grid Computing*. These events are now well established, cater for around about over 700 delegates per year, attract 300-paper submissions, and are commercially sponsored to the order of $60K. These TFCC sponsored happenings are now independently managed annual events that have their own steering committees and have selected venues for several years ahead. The popularity of these events demonstrates that the TFCC now has a well-established presence in both the academic and commercial communities.

The profile the TFCCs membership also reflects the importance of the area that the TFCC supports. As can be seen from the make up of the executive and advisory committees, the members are international leaders and experts in their fields of expertise.

The TFCC has hopes of becoming a full Technical Committee on Clusters and Grids. The slight change of emphasis of the TC name comes about because the TFCC has been covering Grid Computing as well as Clusters for several years already. The new name encapsulates the communities that the TFCC currently already caters for. In addition, we feel strongly, from a IEEE CS strategic point of view, that Grid computing is a key area of knowledge and technology that should be covered by the TAB.

Obviously, many changes will occur to the TFCC if it becomes a TC, but we feel that the spirit and vigour that we have established already will be passed on to the new TC, if such a status is granted.

In summary, we believe that the TFCC is a very successful activity. It is well thought of by the community, and its activities have helped focus both the Cluster and Grid communities over the last few years.