



UKQCD HackLatt 2005 Final Report

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1 Introduction

On 13th—14th April 2005, the UKQCD collaboration organised a workshop entitled *UKQCD HackLatt 2005*. This workshop brought together particle physicists and software developers from across the UK and beyond, with the aim of disseminating information and training on the powerful and diverse computational resources that are available within the UK.

The workshop was organised by Dr George Beckett (University of Edinburgh) and Dr Zbigniew Sroczynski (University of Liverpool) with the help of a number of individuals and organisations that are acknowledged in Section 1.1. A website has been created as a repository for information, resources and material pertaining to the workshop:

http://www.ph.ed.ac.uk/ukqcd/training/2005/training_workshop.html.

This report summarises the organisation, content, and outputs of the workshop. In Section 2, we provide a summary of the background and logistics. Then in Section 3, we describe the material covered during the two day event. Feedback and outputs from the workshop are reviewed in Section 4 and then conclusions and possibilities for future events are provided in Section 5.

1.1 Acknowledgements

The workshop organisers would like to acknowledge the contribution of the following individuals and organisations for helping to make the workshop a success:

- GridPP for providing funding and guidance for the workshop programme;
- The National e-Science Centre for providing funding and administrative support;
- UKQCD for providing funding for travel for participants;
- EPCC for providing computing resources and venue facilities for the workshop;
- Professor Robert Edwards, Dr Peter Boyle, Dr Bálint Joó, Dr Chris Maynard, Mr Daragh Byrne, and Mr James Perry for preparing workshop material.



Participants at the UKQCD HackLatt workshop 2005.

2 Logistics of the workshop

2.1 Motivation

The arrival of the QCDOC super computer in Edinburgh at the start of 2005 and the corresponding expansion of resources and functionality on the UKQCD Grid [3] made Spring 2005 an ideal time for the UKQCD collaboration to hold a workshop for scientists from the field of Lattice Quantum Chromodynamics.



Participants working through tutorial on using QCDOC.

The workshop provided a unique opportunity for investigators and developers from the UKQCD Software Committee to interact with the end-user scientists who directly benefit from the applications and hardware that has been put in place in the UK, helping the committee to formulate future plans for the provision of resources within the UKQCD.

The workshop was composed of a mixture of keynote presentations, hands on tutorials, and discussions. Within this structure, the following topic areas were addressed:

- Working with the QCDOC Super Computer.
- Using particle physics libraries and applications (QDP/Chroma, CPS and XMLDiff [5]) with QCDOC and other HPC compute resources.
- Using the QCDgrid compute and data application suite [4] to interact with the UKQCD Grid.

Experts were on hand to provide advice, answer questions, and discuss any particular issues of concern.

2.2 Funding

The workshop was jointly funded by:

- GridPP [1], provided financial support to cover catering/administrative costs;
- the National e-Science Centre (NeSC) [2], provided funding for the plenary speaker, Professor Robert Edwards of the Theory Group at the Jefferson Laboratories in Virginia, USA.

In addition: travel for participants from within the UK was provided by the UKQCD travel fund (PPARC Grant Number PPA/G/S/2002/00467); computing resources and venue facilities were provided by EPCC, the University of Edinburgh [6].

3 Structure and content of workshop

3.1 Programme and speakers

Below, an outline of the content of the two day programme is provided. A comprehensive description of the programme is available from the workshop webpage [7].



Dr Chris Maynard begins his introduction to grid computing.

3.1.1 Day 1 – Wednesday 13th April

Day 1 of the workshop included the following key components:

- Dr Peter Boyle – A Brief Introduction to the QCDOC system: presentation plus tutorial exercises.
- Dr Zbigniew Sroczynski – The CPS library: presentation plus tutorial exercises.
- Prof. Robert Edwards and Dr Bálint Joó – The QDP/Chroma library: presentation plus tutorial exercises.

Day 2 – Thursday 14th April

Day 2 of the workshop included the following key components:

- Dr Zbigniew Sroczynski – XML tools: presentation plus tutorial exercises.
- Dr Chris Maynard – An introduction to grid computing: presentation.
- Mr Daragh Byrne – QCDgrid, introduction and usage: presentation plus tutorial exercises.
- Mr James Perry – QCDgrid administration: presentation.

In addition, a workshop dinner was held on the evening of Day 1 in Howies Restaurant, Victoria Street, Edinburgh.

3.2 Preparations

In addition to the usual preparations that are required for any workshop, the organisers and presenters worked in collaboration with EPCC to install and configure software and tools onto the EPCC Training Facility (a SunBlade 2000 server with 26 lightweight SunRay client terminals) in order to support implementation of hands-on exercises.

Specifically, the following software/resources were installed and configured:

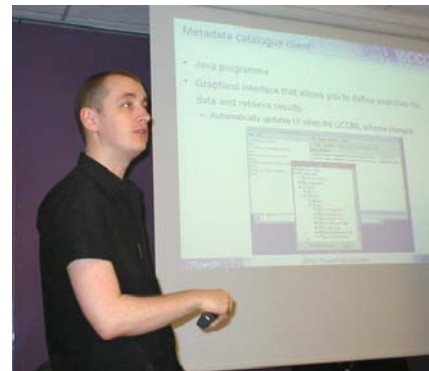
- QCDOC – Peter Boyle;
- QDP/Chroma library – Bálint Joó;
- CPS and XML tools (Expat and some Perl modules) – Zbigniew Sroczynski;
- QCDgrid client tools – Daragh Byrne and James Perry.

3.3 Participants

In total, 27 people attended the workshop. The make up of participants included post-graduate students, researchers and lecturers from the fields of Physics and High Performance Computing. A full attendance list is provided in Appendix A.

3.4 Presentations and exercises

Copies of the various presentations, tutorials, and other resources can be found on the workshop webpage [7].



Daragh Byrne explains how to use the QCDgrid Browser

4 Evaluation and output

4.1 Methodology

To help to confirm the suitability of the workshop content and logistics, plus to highlight any improvements that could be made for similar future events, the organisers prepared a short feedback form. A copy of this form is included in Appendix B. The form includes: ten quantitative questions, each requiring a score of between 1 (lowest mark) and 5 (highest mark); and a general comments box to allow participants to provide other comments, observations and suggestions.

The evaluation form was distributed to workshop participants (not including members of the organising committee or speakers) and completed anonymously. Ten responses were received from workshop participants. This feedback is summarised in the next section.



Participants engage in a discussion about the QCDgrid application suite.

4.2 Feedback

For each of the questions on the evaluation form, the mean score (based on the ten responses received) is presented in Table 1.

Question	Mean score
Will the workshop training be of direct benefit to you in your work?	4.2
Was the style of the workshop appropriate for you?	4.5
How much has your understanding of this area been extended over the period of the workshop?	3.8
How effective were the workshop co-ordinators in dealing with questions/queries?	4.8
How would you assess the general approach of speakers/trainers to working with the group?	4.8
Was the style of the discussion and instruction appropriate for you?	4.7

Question	Mean score
How effective were the speakers/trainers in dealing with questions/queries?	4.7
Did the group engage in debate and discussion?	3.2
Did the speakers/trainers facilitate discussion and questions?	4.2
How useful will slides and printed material from the workshop be?	4.0

Table 1: Summary of feedback received, based on ten responses to the workshop evaluation form.

In addition to the quantitative feedback, one general comment was also submitted, as follows: *Would you please make as many presentations/material available as possible from outside/our home institutions.*

5 Conclusions and future plans

The UKQCD HackLatt 2005 workshop provided a two day programme of material intended to disseminate information and educate particle physicists working in the UK and beyond about the resources, applications, and expertise that is available to help them in their research. Based on the feedback received from participants, both via the evaluation form (see Section 4.2) and through informal discussions, we conclude that the workshop was very successful:

- providing relevant material and information for participants;
- targeting an appropriate level of detail and difficulty;
- presenting a sensible mix of presentations and hands-on exercises.

We also believe that the workshop was generally effective in introducing scientists from different institutions and background to each other, helping to foster future collaboration and interactions.

Based on the success of the activity, the UKQCD Collaboration would hope to be able to obtain suitable funding and resources to conduct a future workshop activity, following a similar structure to this one and building on the groundwork that has been done.

6 References

- [1] GridPP – UK Computing for Particle Physics, homepage at <http://www.gridpp.ac.uk/> (May 2005).
- [2] The National e-Science Centre, homepage at <http://www.nesc.ac.uk/> (April 2005).
- [3] The QCDGrid project: probing the building blocks of matter with the power of the Grid, homepage at <http://www.gridpp.ac.uk/qcdgrid/> (May 2005).
- [4] QCDgrid: a software suite for managing data- and compute-grid resources, homepage at <http://forge.nesc.ac.uk/projects/qcdgrid/> (May 2005).
- [5] XMLDiff: a tool for the automated comparison of XML documents, homepage at <http://forge.nesc.ac.uk/projects/xmldiff> (July 2004).
- [6] EPCC, University of Edinburgh. Homepage at <http://www.epcc.ed.ac.uk/> (May 2005).
- [7] UKQCD HackLatt Workshop: a workshop on lattice QCD codes. Homepage at http://www.ph.ed.ac.uk/ukqcd/training/2005/training_workshop.html (April 2005).

Appendix A Workshop Attendance List

Name	Organisation
Mr Ian Allison	University of Glasgow
Mr David Antonio	University of Edinburgh
Dr George Beckett	EPCC
Mr Daragh Byrne	EPCC
Dr Alex Dougal	University of Glasgow
Dr Robert Edwards	Jefferson Laboratories, Virginia
Dr Eduardo Follana	University of Glasgow
Dr Eric Gregory	University of Liverpool
Dr Alistair Hart	University of Edinburgh
Dr Gregorio Herdoiza	University of Wales, Swansea
Dr Rodger Horsley	University of Edinburgh
Dr Bálint Joó	University of Edinburgh
Prof Anthony Kennedy	University of Edinburgh
Prof Richard Kenway	University of Edinburgh
Mr Joy Khoriaty	EPCC
Dr Changhoan Kim	University of Southampton
Dr Craig McNeile	University of Liverpool
Dr Chris Maynard	University of Edinburgh
Dr Jun Noaki	University of Southampton
Mr James Perry	EPCC
Ms Jenny Pickavance	University of Liverpool
Dr Paul Rakow	University of Liverpool
Mr Charles Roberts	University of Liverpool
Dr Zbignew Sroczynski	University of Liverpool
Ms Aurora Trivini	University of Wales, Swansea
Mr Robert Tweedie	University of Edinburgh
Dr Azusa Yamaguchi	University of Glasgow

Table 2: Participant list for the workshop.

Appendix B Workshop feedback form

UKQCD HackLatt 2005

Wednesday 13th – Thursday 14th April 2005

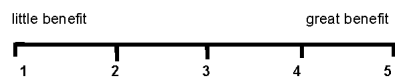
Trainer/facilitator : Various speakers from UKQCD and wider community.

Please complete this evaluation form and return it to George Beckett or Zbigniew Sroczynski.

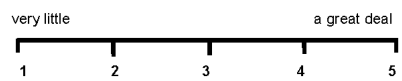
Circle the number on the scale which best represents your evaluation of the session.

Workshop overall

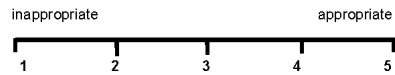
Will the workshop training be of direct benefit to you in your work?



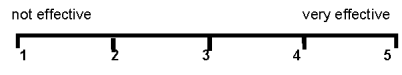
How much has your understanding of this area been extended over the period of the workshop?



Was the style of the workshop (more or less participative, informal/formal etc) appropriate for you?

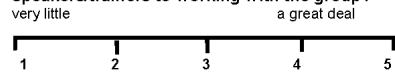


How effective were the workshop co-ordinators in dealing with questions/queries?

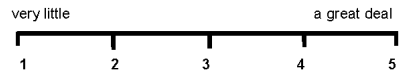


Discussion and interaction

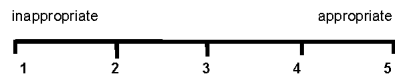
How would you assess the general approach of the speakers/trainers to working with the group?



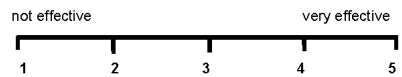
Did the group engage in debate and discussion?



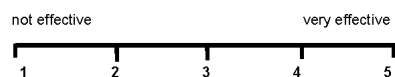
Was the style of the discussion and instruction (more or less participative, informal/formal etc) appropriate for you?



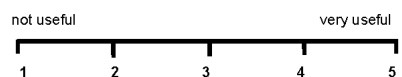
Did the speakers/trainers facilitate discussion and questions?



How effective were the speakers/trainers in dealing with questions/queries?



How useful will slides and printed material from the workshop be to you?



Any other comments or suggestions for improving the workshop.

Thank you, George Beckett and Zbigniew Sroczynski.