



QCDgrid System Administration Training 2006 - Final Report

Project Title: QCDgrid and UKQCD Physics Software Development projects

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1 Introduction

On Thursday 23rd March 2006, the UKQCD collaboration delivered a workshop entitled *QCDgrid System Administration Workshop 2006*. The event, which was hosted by the National e-Science Centre (NeSC) [2] and developed by staff from EPCC [7], brought together system administrators and software developers from across the UK academic community and beyond, with the intention of providing training on the deployment, maintenance and development of QCDgrid-powered services [4].



Participants working through some of the tutorial material.

This report summarises the organisation, content, and outputs of the workshop. In Section 2, we explain the purpose of and motivation for the event. Then, in Section 3, we outline the material covered during the workshop. Feedback and outputs from the workshop are reviewed in Section 4 and then conclusions and possibilities for future events are discussed in

Section 5.

Funding and acknowledgements

Staff effort for the preparation and delivery of material for the course was provided by UKQCD Physics Software Development project (PPARC Grant Number PP/C504386/1). Catering and administration costs were covered by the GridPP programme [1]. Travel for a number of participants was covered by the UKQCD Travel Fund (PPARC Grant Number PPA/G/S/2002/00467). Computing resources and venue facilities were provided by the National e-Science Centre [2].

The workshop organisers would like to acknowledge the crucial contributions of the UKQCD Physics Software Development and QCDgrid project teams, with specifically mention for Daragh Byrne, Chris Maynard, Jeremy Nowell and James Perry, who prepared and delivered the material for the workshop.

2 Motivation

The aim of the event was to disseminate the skill set required to deploy and manage a QCDgrid-powered system, targeting both existing and potential future users of the application. At the time of writing, the most significant instance of a QCDgrid service was the UKQCD Grid. This was used as a case study example throughout the workshop material.



Participant gets to grips with the installation of the QCDgrid GUI.

The workshop also fulfilled a recommendation of the UKQCD Grid Support Review [6] to deliver training to the system administrators that are responsible for the sites that contribute to the UKQCD

Grid. At the workshop, there was at least one representative from each site on the UKQCD Grid (except for Columbia which is administered by the QCDgrid project team in Edinburgh).

3 Structure and content of workshop

The full programme for the event can be viewed on the NeSC website [8], with the timetable being reproduced in Figure 3.1. The programme was assembled from a mix of keynote presentations, hands-on tutorials, and discussion sessions. Within this structure, the following topic areas were addressed:

- Setup and installation of Globus and EDG components.
- Setup and configuration of QCDgrid client/storage/control systems.
- Diagnosis and resolution of typical problems and failures.

Experts from the QCDgrid project team and EPCC [7] were on hand to provide advice, answer questions, and discuss any particular issues of concern.

QCDgrid System Administration Training 2006	
23 March, 2006 09:00 AM - 05:00 PM	
e-Science Institute, 15, South College Street, Edinburgh	
Organisers: George Beckett and Joachim Hein.	
09:00	Coffee.
09:15	21H Welcome .
09:30	22H Installing and setup of Globus Toolkit – including tutorial. (<i>Jeremy Nowell</i>)
10:30	Coffee
11:00	23H QCDgrid administration basics . (<i>Chris Maynard</i>)
12:00	Setting up a QCDgrid client – tutorial. (<i>Daragh Byrne and Chris Maynard</i>)
12:45	Lunch.
13:30	24H Advanced QCDgrid administration . (<i>Daragh Byrne</i>)
14:45	Coffee.
15:15	25H System trouble-shooting . (<i>Daragh Byrne</i>)
16:15	Discussion session. (<i>Daragh Byrne and Chris Maynard</i>)
16:45	Close.

3.1 Programme and speakers

The day was split into seven sessions, including four presentations, two tutorials, and one discussion group (see Figure 3.1). Presentation material from the day is available on-line from the QCDgrid project homepage [5]. Furthermore, specific



Chris Maynard explains the motivation for the QCDgrid project.

documents are linked to the corresponding table entry in Figure 3.1.

3.2 Preparations

In addition to the usual preparations that are required for any workshop, the team configured the QCDgrid Development System to provide a hosting environment for the tutorial exercises.

3.3 Participants

In total, twelve people participated in the workshop. The makeup of participants included research, system administration, and other technical staff from the fields of Physics and High Performance Computing. A full attendance list is provided in Appendix A.

In addition to system administrators from the UKQCD Grid, other participants at the workshop included members of the QCDOC support team – who are responsible for the maintenance of the QCDOC super computer and related resources – and members of the HPC-Europa NA3 – Data Management and Portability project, who are (at the time of writing) evaluating the QCDgrid software in the context of that particular project.

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 and completed anonymously. Nine responses were received from workshop participants. This feedback is summarised in the next section.



Daragh Byrne helps participants with tutorial work.

4.2 Feedback

For each of the questions on the evaluation form, the mean score (based on the nine responses received and quoted to 1 decimal place) is presented in Table 1.

Question	Mean score
Will the workshop training be of direct benefit to you in your work?	4.3
Was the style of the workshop appropriate for you?	4.7
How much has your understanding of this area been extended over the period of the workshop?	3.4
How effective were the workshop co-ordinators in dealing with questions/queries?	4.7
How would you assess the general approach of speakers/trainers to working with the group?	4.4
Was the style of the discussion and instruction appropriate for you?	4.6
How effective were the speakers/trainers in dealing with questions/queries?	4.7
Did the group engage in debate and discussion?	3.7
Did the speakers/trainers facilitate discussion and questions?	4.2
How useful will slides and printed material from the workshop be?	4.8

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

In addition to the quantitative feedback, several general comment were submitted, as follows:

- *Very useful – made clear a lot of things that were a bit murky.*
- *Thanks. Well organised and very useful!*
- *Thank you for running the course, as it was very useful, and did help to bring all the facts and issues together – even for someone who has managed a system for a while and has previous Globus Grid experience.*

5 Conclusions and future plans

The QCDgrid System Administration workshop 2006 delivered the knowledge and understanding required to set up and maintain a QCDgrid-powered system. Twelve people participated in the workshop, including system administrators involved with the UKQCD Grid, technical staff from the QCDOC team, and external participants from the HPC-Europa NA3 activity.

With the skill set and knowledge imparted during the workshop, the organising team is confident that the event will furnish a more reliable UKQCD Grid with better support for users available on-site.

Based on the feedback received from participants, both via the evaluation form (see Section 4.2) and through informal discussions, we assert that the workshop was very successful:

- providing relevant material and information for participants;

- attaining an appropriate level of detail and difficulty;
- delivering a sensible mix of presentations and hands-on exercises.

Based on the success of the activity, the UKQCD collaboration would hope to be able to obtain similar 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. In a future activity, the organisers would hope to be able to include presentations for QCDgrid users outwith the UKQCD collaboration.

6 References

- [1] GridPP – UK Computing for Particle Physics, homepage at <http://www.gridpp.ac.uk/>.
- [2] *The National e-Science Centre*, homepage at <http://www.nesc.ac.uk/>.
- [3] *The QCDGrid project: probing the building blocks of matter with the power of the Grid*, project homepage at <http://www.gridpp.ac.uk/qcdgrid/>.
- [4] *QCDgrid: a software suite for managing data- and compute-grid resources*, software homepage at <http://forge.nesc.ac.uk/projects/qcdgrid/> (May 2005).
- [5] *QCDgrid System Administration Training 2006*, course material from http://www.gridpp.ac.uk/qcdgrid/qcdgrid_sys_admin_2006.html (March 2006).
- [6] QCDgrid project team, *UKQCD Grid Support Review 2005*, project report [QCDGRID2-SUPPORT2005-1.0.1](#) (February 2006).
- [7] *EPCC, University of Edinburgh*. Homepage at <http://www.epcc.ed.ac.uk/>.
- [8] *QCDgrid System Administration Training 2006*, event homepage at <http://www.nesc.ac.uk/esi/events/663/> (March 2006).

Appendix A Workshop Attendance List

Name	Organisation
Dr Chris Allton	University of Swansea
Dr Csaba Anderlik	University of Bergen
Dr David Baker	University of Southampton
Dr George Beckett	University of Edinburgh
Mr Daragh Byrne	University of Edinburgh
Mr Steve Downing	University of Liverpool
Dr Alan Gray	University of Edinburgh
Dr Chris Johnson	University of Edinburgh
Mr Craig Morris	University of Edinburgh
Dr Jeremy Nowell	University of Edinburgh
Ms Linda Stretford	University of Edinburgh
Mr Jimmy Tang	Trinity College, Dublin

Table 2: Participant list for the workshop.

Appendix B Workshop feedback form

QCDgrid System Administration Course 2006

Thursday 23rd March 2006

Please complete this evaluation form and return it to George Beckett. Circle the number on the scale which best represents your evaluation of the session.

Workshop overall

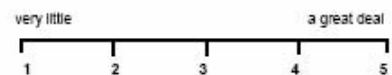
Will the workshop training be of direct benefit to you in your work?



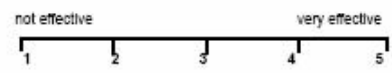
Was the style of the workshop (more or less participative, informal/formal etc) appropriate for you?



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

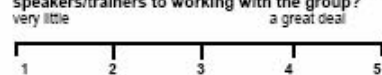


How effective were the workshop co-ordinators in dealing with questions/queries?



Discussion and interaction

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



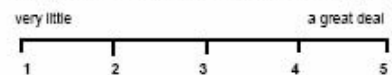
Was the style of the discussion and instruction (more or less participative, informal/formal etc) appropriate for you?



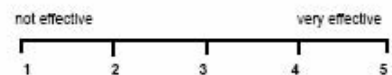
How effective were the speakers/trainers in dealing with questions/queries?



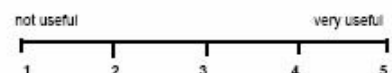
Did the group engage in debate and discussion?



Did the speakers/trainers facilitate discussion and questions?



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



Any other comments or suggestions for improving the workshop.